Work Related Effects of an Awareness Training Programme:

An investigation into training transfer and applicable criterion measures

A dissertation submitted in partial fulfillment of the requirements for the degree of

Master of Science in Applied Psychology

at the

University of Canterbury

Christchurch, New Zealand

by

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Submitted:

25-01-2013

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Contents

Acknowledgements

I want to thank both my supervisors, Dr. Joana Kuntz and Dr. Katharina Näswall for their willingness and support over all stages of my studies and this research journey. I want to thank Dr. Joana Kuntz particularly for her tireless feedback and encouragement to refine and improve on, what appeared at times a work of far too many, thoughts and words; and Dr. Katharina Näswall for her guidance and ideas on the technicalities of statistical analyses.

I want to thank all board members of the More To Life Foundation, Sharon Hoover as Chair and Richard Perry as Director of Training for supporting this project, and Martha Edgemont for sending out the invitations to participate in the survey.

Finally I want to thank my wife Ursula for her willingness to support me in my journey toward this degree, and her tolerance to the many occasions during which I 'disappeared' into my office.

Figures

Tables

Abstract

This study investigated predictors for training transfer and their relationship with work related effectiveness measures of the group based awareness training The More To Life Weekend. The purposes of the study were to: (1) establish and test predictors for effective training transfer, (2) identify and test constructs for work-related effectiveness, and (3) provide direction for the design of an evaluation study. This study was conducted with past participants of the training, in a cross-sectional design using self-report surveys, and data was analysed using regression analyses. Instruments for measuring controlled and autonomous motivation to attend the training, the perceived utility of the training, utilisation of post-training support opportunities and the degree of on-going practice were developed for the study. The results indicate that perceived training utility is an important predictor for transfer. Controlled motivation to attend the training is showing the expected nil-relationship, while autonomous motivation is showing a relationship with transfer without reaching statistical significance. The results confirm a significant positive relationship between on-going practice of the trained techniques with positive psychological capital, whereas the relationship with a one-dimensional measure of mindful attention awareness did not reach levels of statistical significance. Utilisation of post-training support and on-going practice were confirmed as mediators between perceived training utility and the effectiveness measures of mindful awareness and positive psychological capital. Recommendations are made for using a multi-dimensional measurement of mindful awareness and the design of a future evaluation study on this training programme.

Introduction

Organisations are continuously seeking ways to improve employee and business capabilities, and to gain and retain a competitive edge in their Human Resource practices. Investment in learning and development activities continues to increase; the *American Society for Training & Development* (ASTD) State of the Industry Report for 2011 (as cited by Green & McGill, 2011) reports a spend of US$171.5 billion on employee learning and development activities in 2010, a nearly 13% increase over 2009 (Green & McGill, 2011). During 2009, 23.6% of the workforce in Australia participated in structured training activities unrelated to gaining a formal qualification (Australian Bureau of Statistic, 2012), comparable to 1996 data available for New Zealand showing that 20.9% of wage and salary earners participated in training provided by their employer (Cook, 1997). Traditionally, academic education has focused on teaching technical knowledge (Townley, 1995), while organisations allocate significant resources to improve their employees' personal and interpersonal skills, and around 39% of learning is placed in content areas such as interpersonal, managerial and supervisory skills, sales and customer service as well as executive development (Green & McGill, 2011). Some organisations have, in their quest for increasing organisational performance, recognised the benefits of and engaged in practices such as *mindfulness* meditation to counteract automatic mindless behaviours (Gardiner, 2012). While such practices are gaining acceptance, the implementation of appropriate training methods or programmes remain challenging as empirical evidence demonstrating the effectiveness and benefits of specific interventions in that domain is not readily available. Burke and Day (1986) commented on the lack of knowledge regarding the effectiveness of training programmes in general. While that comment related to more traditional managerial training and

research conducted in the ’70s and ’80s, it is equally relevant today for the evaluation of training programmes designed to develop, for example, mindfulness as a mechanism for self-awareness and self-regulation.

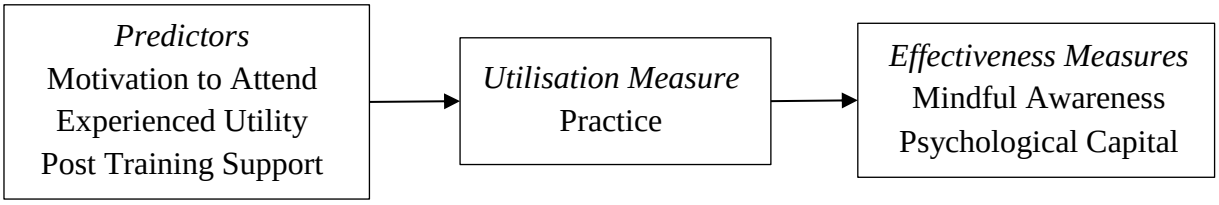
While organisations continue to increase their investment into learning and development (Green & McGill, 2011), they also increasingly demand evidence of the benefits of training investments (Luthans, Youssef, & Avolio, 2007b). Two essential components to creating evidence-based justifications for the investment in training are: (1) the evaluation process, and within the evaluation process the identification of suitable criterion measures, and (2) an understanding of the factors leading to and influencing successful skill transfer into the work environment (Goldstein & Ford, 2002). Selecting appropriate criteria to demonstrate the effectiveness of training interventions, and identifying the predictors of successful training transfer using sound scientific methods is therefore of value to organisations and their HR and OD professionals. Many training programmes and training methods have been suggested for increasing and developing self-awareness and mindfulness, including 360 degree feedback (Gareth, 2009; Townley, 1995), executive coaching (Kress, 2008), and Buddhist meditation (Gardiner, 2012). This study covers transfer and outcomes for one specific intervention in the training domain of self-awareness, self-regulation and mindfulness. The objectives of the study are threefold:

1. to identify and test applicable constructs and instruments to measure and predict transfer of the training content;
2. to identify and test applicable criteria for measuring work related effectiveness of the training’s content and practices; and
3. to provide information and guidance for the design of a future evaluation study on the training programme.

Prior research on training transfer (e.g. Blume, Ford, Baldwin, & Huang, 2009; Grossman & Salas, 2011) highlighted relationships between: (a) the trainees' motivation to attend the training, (b) their perception of value received from the training, and (c) the degree of support utilised following the training, with the degree of training transfer. To test the assumptions relating to the first objective of the present study, three constructs were operationalized as predictors for transfer: *trainee motivation*, the trainee's reasons for taking the training; *experienced utility*, the value and benefits perceived by the trainee following attendance of the training, and *post-training support*, the level of support utilised by the trainee to learn and master the training content. To measure the degree of training transfer achieved, the outcome variable *practice* was operationalized as the degree of utilisation of the techniques several months and years following the training. As post-training support activities are occurring after the training, the corresponding variable *post-training support* was investigated as a mediator in the relationship between motivation, experienced utility and practice. Practice is operationalized as a measure of frequency and extent of use, and not a measure for the effects of the training. Thus, in response to Goldstein and Ford's (2002) call to quantify training outcomes with business-relevant effectiveness measures and to satisfy the second objective of this present study, the relationships between Practice with two known work relevant outcome measures were assessed. The work-related criteria identified were *Mindful Awareness*, measured using the *Mindful Attention Awareness Scale* (MAAS) created to measure mindful states (MacKillop & Anderson, 2007), and *Positive Psychological Capital* or *PsyCap*, a composite measure developed within the school of positive organisational behaviour and already linked to multiple work related outcomes (Luthans et al., 2007b).

Figure 1 shows the conceptualised relationships applied to this study, first between the constructs used to predict training transfer with the measure for utilisation, and further between the utilisation measure with the measures for effectiveness.

Figure 1: Research model for this study



Open and Closed Skills Training

Skill training has been categorised by Yelon and Ford (1999) into *closed* and *open skills*; closed skills training aims at developing a skill based on a set of rules applicable equally in the learning and in the applied context, such as technical computer skills; open skills training links training objectives to principles applied in highly variable contexts with a high level of freedom, such as leadership behaviour. Closed skills training is researched more often and in greater detail than open skills training (Blum et al., 2009), and specialised literature such as Goldstein and Ford's (2002) book Training in Organisations is available. Closed skills training of technical and procedural knowledge applies to all roles, whereas open skills training is relevant for roles that require well-developed interpersonal skills and wherein incumbents are often faced with unpredictable situations. When role holders are required to respond in flexible and fitting ways to complex or shifting situations, rule-based actions anchored on rigid principles will not reliably guide responses fitting the situation, and could lead to unfitting automatic reactions, which may even be counterproductive.

Open skills in the leadership context.

Research has demonstrated the importance of open skills and their applicability to leadership settings in theoretical models such as emotional intelligence (Bratton, Dodd, & Brown, 2011), situational leadership (Vroom & Jago, 2007), transcendent leadership (Crossan & Mazutis, 2008), and particularly in *authentic leadership* (Eriksen, 2009; Ilies, Morgeson, & Nahrgang, 2005). The concept of authenticity, being true to one's self, has its origin in old Greek philosophy. The modern definition in positive psychology expands on that and includes taking responsibility for, or owning, what is, and not taking responsibility for what is not one's responsibility to take. Gardner, Avolio, Luthans, May and Walumba (2005, p. 344f) have defined personal authenticity as "both owning one's personal experiences (values, thoughts, emotions and beliefs) and acting in accordance with one's true self (expressing what you really think and believe and behave accordingly". Authenticity is not a dichotomous concept, but rather best described as the degree of authenticity of a person, assuming they can be more or less authentic in different contexts (e.g. during meetings versus one-to-one discussion) and at different times such as Monday mornings compared to Friday afternoons (Gardner et al., 2005). Authentic leadership is operationalized as "a pattern of leader behaviour that draws upon and promotes both positive psychological capacities and a positive ethical climate, to foster greater self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers, fostering positive self-development" (Walumbwa et al., 2008, p. 94). The core components of authentic leadership, self-awareness and self-regulation, when practiced by the leader, provide a model for and enable the equivalent practices in others. This is referred to as authentic followership, and through role modelling by the leader, is in effect creating or calling forth the same authentic behaviours and characteristics in

leaders *and* followers (Gardner et al., 2005). Notions encapsulated in authentic leadership are therefore not limited to leaders. When authenticity is modelled by the authentic leader, all organisational members can own their personal values, emotions and beliefs and act congruently with them in the organisational environment (Gardner et al., 2005). Authentic leader and followership then create positive outcomes such as engagement and workplace well-being (Gardner et al., 2005) and positive relationships with others (Ilies et al., 2005). Crossan and Mazutis (2008) argue that the modern leadership models of transcendent and authentic leadership require not only high technical knowledge, skills and abilities, but also an increased level of self-awareness and self-mastery in order to create and sustain the contributions to the organisation. Individuals are required to respond with self-regulated actions rather than react automatically on the grounds of unconscious cognitive biases (Crossan & Mazutis, 2008). Self-awareness and self-regulation are named as key leadership requirements in management journals by e.g. Conchie and Rath (2008) and Crnokrak (2010). *Self-awareness* is defined as "one's awareness of, and trust in, one's own personal characteristics, values, motives, feelings, and cognitions" (Ilies et al., 2005, p. 337). *Self-regulation* refers to the internal processes of the goal-directed human individual to purposefully acquire and realise goals (Vancouver & Day, 2005), and is "a multifaceted phenomenon operating through a number of subsidiary cognitive processes including self-monitoring, standard setting, evaluative judgment, self-appraisal, and affective self-reaction" (Bandura, 1991, p. 282). *Balanced information processing* is a component of self-regulation, characterised by an ability to more objectively process situations and events to derive a more accurate reflection of the reality and the associated meanings (Gardner et al., 2005).

Open skills in the work context.

Open skills, such as self-awareness, self-regulation and balanced information processing, are not limited to leadership roles, in fact many roles in modern organisations, from customer services staff to product development professionals, subject matter experts or team supervisors, face highly variable situations requiring flexible responses. When reviewing articles and books that focus on the working individual, one will soon find references to the increasing complexity, speed and competitiveness in modern organisations and the resulting demands placed on employees and their families (for examples see Allvin, Aronsson, Hagstrom, Johansson, & Lundberg, 2011 or Näswall, Hellgren, & Sverke, 2010). Companies are required to cost reduce, raise efficiencies, and to constantly innovate, while new products and services are quickly replicated by their competitors. Increasingly complex and tightening regulatory and statutory requirements are to be managed within equally complex global partnerships and fine-tuned supply arrangement. All are examples of the increasing competitive pressure placed on organisations, pressure that results in strain on the individual organisational member (Allvin, 2008; Allvin et al., 2011). The working individual is required to not only cognitively process comprehensive technical knowledge, but also quickly discern the specific aspects of a situation before applying relevant knowledge (Allvin et al., 2011). Kopelman, Feldman, McDaniel and Hall (2012) propose that in order to create a rewarding career, one is required to align the career with one's values and self-directed goals. In essence they propose that a truly fulfilling career must generate joy and excitement or other strong positive emotions, and it must be well integrated and balanced with other life aspects, namely family life and personal aspirations. This requires the individual to develop a conceptual framework that includes mindful self-reflection, described as the ability to freely act without being tied to one's prior conditioning, fears

or ego, which then leads on to objective observation and acceptance of feelings and cognitions occurring in the moment (Kopelman et al., 2012).

Open skills, authenticity and psychological capital.

Walumba et al. (2008) acknowledge the state-like nature of the construct of authentic leadership, a proposition made by Avolio (2005a) contrasting it to trait-like or born leader concepts. These propositions support authentic leadership being open to development through open skills training (Gardner et al., 2005). Integral in the theory of authentic leadership are the positive psychological states encapsulated in the construct of *Positive Psychological Capital* (PPC), also referred to as *Psychological Capital* (PsyCap)[1]. PsyCap relates to positive psychological work outcomes, specifically the constructs of *self-efficacy*, *hope*, *optimism*, and *resilience* and is defined as:

> … an individual's positive psychological state of development and is characterized by: (1) having confidence (self-efficacy) to take on and put the necessary effort to succeed at challenging tasks; (2) making positive [and flexible] attributions (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back even beyond (resilience) to attain success (Luthans et al., 2007b, p. 3).

As outlined later in more detail, PsyCap is a construct that is predicted to reflect the psychological state associated with authentic behaviours as conceptualised earlier in authentic leader- and followership. Authentic leadership recognises the emotional response to trigger events as part of awareness of the self (Gardner et al., 2005). The authors identify one's personal history of life experiences and trigger events as precursors

[1] for the detailed perspective on PsyCap refer to Luthans, Youssef, and Avolio, Psychological Capital - Developing the Human Competitive Edge, 2007

to the development of authentic behaviour. Trigger events can serve growth and development, more specifically they can serve as an avenue to reflect on the self, irrespective of any positive or negatively judged valence placed on those events. Most organisational members experience, as part of their work, events that trigger a more salient reaction, rather than passing by unnoticed. For example, a manager may receive the quarterly financial report or the resignation of a staff member. The manager's mind will quickly assess and react to the news, and may feel disappointed or happy about either of those events. Any of these events however, may be used to pause and reflect on one's own state of being and behaviours in the wake of such event. The effect of such reflection is an increased ability to respond to situations without engaging any reactive behaviour aimed at defending one's ego, or self-concept (Gardner et al., 2005). The manager may recognize and take responsibility for his or her own upset of not achieving the sales budget and decide to revise actions based on market reality rather than desire to prove others wrong in their assessment of the market. The proposition of learning through trigger events is similar to the core concept of learning to observe events without engaging in secondary evaluative processing in the psychology of Buddhist mindfulness (Grabovac, Lau, & Willett, 2011). One of the challenges to developing authenticity in fast paced organisational settings is to find time to pause and reflect. Organisational events are demanding effective and fast, but also flexible and situation-specific decisions and actions. To facilitate routine and fast decision processes, the human mind develops *scripts*, predefined sequences of behaviour, initiated by trigger events and executed with little cognitive effort (Ashforth, Kreiner, & Fulgate, 2000). While scripts can serve the individual in becoming efficient in the moment, they have a downside too. With increased routine and automaticity, scripts become effortless and mindless, and may become limiting to the ability to respond appropriately to the reality of the actual events.

The mind, triggered by events, quickly makes interpretations, while nuances and new features of the situation are easily overlooked. Script and event will not always be fitting and at times even become reactive and dysfunctional (Ashforth et al., 2000). Brown and Ryan (2003) compare mindless states to a blunted sensitivity to reality with the known side effects of one's awareness being divided between multiple tasks, cognitive resources being multiplexed and no longer allocated to a primary purpose. The mind, with resources spread thin, will not process thoughts to the end, but switch between different strands and thus become cognitively preoccupied with managing unfinished thoughts. Thoughts then often turn into concerns and the resulting ruminations create a distance to what is really taking place in the present moment, and subsequent actions become automatic, at times compulsively or defensively motivated (Brown & Ryan, 2003). Living in such a mindless state will contribute to a reduced performance, increased stress and be detrimental to overall well-being (Brown & Ryan, 2003; Vilardaga, et al., 2011; Wolever, et al., 2012). Achieving and maintaining mindful awareness is linked and related to self-regulation processes and balanced processing in particular, and explains the interest in Buddhist mindfulness practices for leadership development (Gardiner, 2012; Sauer, Andert, Kohls, & Müller, 2011). While the importance of developing authentic leadership competencies is acknowledged, very little evidence is available on the effectiveness of specific training processes or programmes aimed at supporting elements of authentic leader and followership, such as self-awareness, self-regulation and balanced processing or using trigger events as a vehicle for personal growth.

The MTLW Training and its Psychological Background

One training programme with multiple courses specifically designed to increase self-awareness, self-regulation and self-mastery, core elements of authenticity, is offered by the More To Life Foundation. The programme originated in the USA in the '80s and

has since spread and is now offered in the USA, Canada, United Kingdom, South Africa, New Zealand, Germany and Spain (More To Life Foundation, 2012). The researcher has personally participated in several trainings and is involved in the organisation and delivery of trainings in New Zealand and Germany. The programme was originally designed for the general population as a way to improve personal well-being and life-satisfaction and through personal referral has reached the business world. In many instances companies are making use of the intervention and support or encourage people to taking part in the programme. While data collected by the training provider, anecdotal evidence, and the longevity of the programme suggest high intervention efficacy, it has so far attracted little research attention.

The specific intervention selected for this study is *The More To Life Weekend* (MTLW), designed as group training attended by between 40 and 80 participants in one event. It is delivered over two and a half days and facilitated by trainers who are coached by the training provider. The MTLW is designed within the school of humanistic psychology and philosophically and conceptually congruent with the propositions made for authentic leader and followership. Its training techniques are at least in part informed by principles of *Rational Emotive Therapy* (RET), Aaron Beck's on *Cognitive Behaviour Therapy* (CBT), and combined with awareness-raising techniques influenced by Buddhist practice. It is based on the RET[2] theory that individuals are responsible for their reactions and capable of intervening between the environmental inputs and the emotional and behavioural output (Ellis, 1973). Ellis (1973) emphasises that people often allocate significant resources and get caught in trying to avoid or to sidestep perceived personal issues and failings, leading to reactive behaviour that can be detrimental to performance. Ellis details how through RET, individuals can learn to resolve their residual cognitive

[2] For a detailed overview see Wessler & Wessler, The Principles and Practices of Rational-Emotive Therapy (1980)

errors in order to solve the real issue as they face it, and return to creatively and constructively engage in performance-related activities. The MTLW teaches practices aimed at modifying fundamental beliefs and schemata, in line with Ellis' approach to changes on irrational beliefs as summarised by Dryden (2011).

Using multiple methods, such as reflective exercises and interactive teaching segments, participants learn, experience and practice techniques to: (a) raise their general self-awareness; (b) recognise trigger events and reappraise their thought patterns and cognitive schemata leading to automatic behaviours; (c) find and return to the authentic self; (d) set meaningful goals; and (e) accept and forgive others and self. The training transfer is supported by optional post-intervention practice sessions, audio materials, participant-lead support groups and one-on-one support partnerships. Post-training practice sessions are offered by the training provider and completed usually within three months following the training, while other support options are not time bound. This study focuses on those training components related to the development of mindfulness and self-regulation. Additional psychological mechanisms and constructs, such as willingness to forgive (Kumar & Ryan, 2009) or forgiveness towards self (Wahkinney, 2001), targeted by this intervention, are not considered in this study.

Becoming aware of one's behaviours and automatic and scripted actions is an essential first step. The Buddhist psychological model[3] postulates that our human attention resources allow us to only be aware of one object at a time, and our habitual reactions lead us to pursue the feelings that are likeable and avoid the ones unlikeable. Within this model, Buddhist mindfulness meditation facilitates awareness and the ability to break the mental chain reactions to outside and inside events (Grabovac et al., 2011). Meditation is the predominantly used method to train mindfulness (Whitten, 2004). As in

[3] For a detailed description of the Buddhist psychological and mindfulness concepts see Grabovac, Lau, & Willett, Mechanism of Mindfulness: The Buddhist Psychological Model (2011)

its Buddhist origin, the practice is linked to temporarily withdrawing from the normal life context through meditation and getting into a retreat-like situation to achieve a state of mindfulness. This approach creates, according to Whitten, a systemic issue in that becoming more skilled in being mindful in quiet surroundings also results in people being less skilled in being mindful in noisy everyday settings. The MTLW teaches an awareness technique to notice, become aware of and intervene in one's cognitive chain reactions, which is not based on meditation, but facilitated through everyday events. Contrary to RET, the MTLW it is not designed to therapeutically aid the correction of dysfunctional beliefs linked to psychological illness, but to empower psychologically healthy individuals to become aware of and being able to reduce the influence of the normally conditioned behaviours limiting one's ability to freely and flexibly respond to situations. This approach is closely aligned with and assessed using outcome constructs developed from the perspective of positive psychology.

MTLW's emphasis on self-responsibility and creative responses to life (and thus work) situations is underpinned by a firm approach to move past any blame and negative judgement of self, others or the context of life and work. This is supported by teaching and practicing a goal setting process, designed to connect people to their internalised value based motivational energies.

Training Transfer and Research Framework

It is long known that only a subset of the training content is later applied by the trainee in the work content and only about 10% of the training expenditure is transferred and affects outcomes in the job (Grossman & Salas, 2011). This transfer problem has attracted much research and a substantial body of conceptual and empirical data has been created (Blume et al., 2009; Grossman & Salas, 2011). In a meta-analytic review by Blume et al. (2009) two main dimensions of transfer, *generalisation* and *maintenance*,

are considered; generalisation describes the transfer from one context to the other, while maintenance refers to the temporal stability of the transfer. These dimensions are adopted in this study with generalisation being the transfer of skills from the training setting into the individual's work context, and maintenance being the on-going use of the trained skill after completion of the post-training support phase. The latter is typically offered within three months following the delivery of the MTLW. Understanding the factors affecting transfer, as well as identifying strategies to increase the probability of successful transfer, is critical to organisations (Goldstein & Ford, 2002). Grossman and Salas' (2011) review of knowledge in the domain of training transfer lead to conceptualisation of three constructs as potential predictors for training transfer relevant for the MTLW and this study: (a) the trainees' motivation to attend the training, (b) their perception of value received from the training, and (c) the degree of support utilised following the training. The participants' continued practice of the techniques trained is considered an indicator for training transfer. These four constructs and their predictor-criterion relationships are developed in the following section.

On-going utilisation of trained techniques as a measure for transfer.

The saying that 'practice makes perfect' is popular wisdom, and research has demonstrated that learning and skill development in fact follows a power function between performance and practice. Speelman and Kirsner (2006) show that any skilled behaviour is a composite of multiple sub-behaviours leading to performance, and they further propose that any skill development is subject to transfer. Skill transfer is a complex mix of many aspects, some under control of the learner, others determined by the environment. When new skills are learnt, the concept of *deliberate practice* (Ericsson, 2004) suggests three phases of skill development towards expert performance: phase 1 - understanding the activity, phase 2 – gaining proficiency, and phase 3 –

automating the activity. Practicing with feedback and support through phases 1 and 2 is essential to mastering the learnt skills (Ericsson, 2004), suggesting that temporal and contextual transfer is completed and proficiency is achieved at the end of phase 2. The construct of deliberate practice explains that purposeful practice combined with feedback is the main contributor to developing and achieving masterful performance. In this study, the on-going and proficient use of a trained skill was investigated, rather than raising the individual's skill level from proficiency to masterful. This still allows for some of the trained individuals having engaged in deliberate practice in their aim of developing masterful skills. Therefore, the construct is intentionally labelled *Practice* and defined as the degree of on-going regular utilisation and application of the trained techniques by the individual. The concept of learning curves, describing the transition from learning to proficiency, is expected to apply for this training programme too, but rather than measuring the performance-relevant output directly, this study measures practice as a proxy for developing performance.

Motivation to attend and its relationship with on-going practice.

Motivation in relation to the individual's continued effort to attain an outcome has been shown to significantly contribute to training transfer (Grossman & Salas, 2011). A review of available literature and research in this domain has identified different approaches to the conceptualisation and research of motivation in the context of training. Grossman and Salas (2011) refer to multiple concepts of motivation related to training such as pre-training motivation, motivation to learn, motivation to transfer and motivation to improve work through learning. Colquitt, LePine and Noe (2000, p. 678) found that "models and predictors have varied greatly over the past decade" and, in response to the increasing number of theories of training related motivation, developed and proposed the integrative theory of training motivation. Their theory is informed by

both need-motive-value, where personal needs motives and values explain the difference between individuals, and cognitive choice theories explaining within person and between options decisions. Very few training motivation studies for work settings are drawing on *Self Determination Theory* (SDT); this is surprising considering that SDT is a theory dominant in research in education amongst other domains (Gagne´et al., 2010). Colquitt et al. (2000) conceptualise training motivation as motivation to learn *within* the learning or training context (refer to figure 1, p. 683), this is reflected in their definition of training motivation as "direction, intensity, and persistence of learning-directed behaviour *in the training contexts*" [emphasis added]. This definition, and the analyses based on it, implies that motivation *during* the training is a sufficient predictor for training transfer *following* the training. As this study tries to inform about the long-term transfer, a conceptualisation and theory of motivation with predictive capability over a longer timeframe was required. SDT is specifically suited as it recognises temporal stability or variation of motivation, specifically in that *autonomous motivation* shows greater temporal stability compared to the more transient nature of *controlled motivation* (Koestner et al., 2008). SDT is rooted in the domain of positive psychology and identifies within the sub-theory of *Cognitive Evaluation Theory* the human need for autonomy, competency and relatedness as a contributor to well-being. Regulation styles of motivation are articulated in the sub-theory *Organismic Integration Theory* (Ryan & Deci, 2000), providing the framework for motivation and internalisation of motivation control mechanisms being conceptualised along a continuum (Gagne´et al., 2012). SDT makes the central and important distinction between controlled and autonomous motivation, with autonomous motivation being seen as vitalising and leading to higher persistence over time as well as to higher performance, while controlled motivation is more likely depleting energy and therefore effective for shorter time only (Deci & Ryan,

2008). Figure 2 shows the conceptualisation of motivation based on motivation style and motivation regulation within the framework of SDT (Deci & Ryan, 2008; Ryan & Deci, 2000). Autonomous motivation includes motivational states of: (a1) intrinsic motivation, inherently autonomously regulated in "doing an activity for the inherent satisfaction of the activity itself" (Ryan & Deci, 2000, p. 71); (a2) extrinsic motivation, referring to performing "an activity in order to attain some separable outcome" (Ryan & Deci, 2000, p. 71), further specified by the regulation style being *integrated* with one's personal values and needs; (a3) extrinsic motivation and the regulation being *identified* via conscious evaluations and adoptions of its importance. Controlled motivation on the other hand includes only extrinsic motivation and the regulation styles of: (c1) *introjected* where control is present through avoidance mechanism or contingent self-esteem, and (c2) *external* where "behaviours are performed to satisfy an external demand or reward contingency" (Ryan & Deci, 2000, p. 72).

Figure 2: Conceptualisation of motivation and motivation regulation based on SDT

INTRINSIC Actions performed for their pleasure	EXTRINSIC Actions performed for their instrumental value or gain associated with the outcome
Control of Motivation Regulation	
(a1) Intrinsic inherent tendency to extend and grow *(a2) Integrated* part of sense of self *(a3)Identified* accepted values and meanings	*(c1) Introjected* self-worth contingencies *(c2) External* seek rewards, avoid punishment
<u>Autonomous Motivation</u> Congruent with values, goals and beliefs, rewarding, little effort, temporal stability	<u>Controlled Motivation</u> Internally pressuring, inconsistent with own values, high effort, transient

Note: based on Ryan & Deci (2000) p. 72

Anecdotal evidence available to the training provider suggests that participants are much better at remembering the reasons for enrolling into the training course, than they are able to recall their motivational state during or immediately following the training. Due to the dynamics of the MTLW, participants are experiencing various motivational states throughout the training, making it difficult for them to respond reliably to questions about their motivational state during the training. The decision was therefore made to measure the trainee's motivation for participation as predictor in this study. It was

conceptualised and defined for this study as the psychological state leading to and supporting the decision to attend the training.

SDT allows for the coexistence of different motivational forces (Grant & Shin, 2011a). Controlled motivation accounts for external pressures created by the work environment and pressures or self-worth contingencies from within the individual, not aligned or congruent with the individual's value system. Autonomous motivation accounts for factors anchored within ones' personal values, beliefs and sense of self (Deci & Ryan, 2008). Grant, Nurmohamed, Ashford, and Dekas (2011b) demonstrated that autonomous and controlled motivations are two dimensions, rather than opposite ends of one, and motivational forces can be present in each of the dimensions for the same behaviour. However, they conclude that autonomous motivation provided better quality of initiative, rather than quantity. Koester et al. (2008) demonstrated that intrinsic motivation with autonomous control is consistently positively correlated to goal progress, while extrinsic motivation with controlled regulation showed a nil-correlation. As outlined before, Koester and colleagues (2008) also demonstrated that autonomous motivation has much greater temporal stability than controlled motivation. With the transfer of the MTLW content being investigated over a time span of three months or more, the greater temporal stability of autonomous motivation is predicted to result in generally stronger relationships to its dependent variables measuring behaviour such as the on-going practice of the training content and utilisation of support following the training. Therefore participants' degree of autonomous motivation to attend is expected to be associated with a more consistent engagement in practicing the training content. The effect of controlled motivation is subject to the changes in and influenced by situational aspects and has led to a near zero relationship found between controlled motivation and goal-oriented behaviour (Koestner et al. 2008). The authors concluded

that this finding may be due to the variability in the relationship averaging out at near zero, particularly in instances where the situation does not provide feedback in relation to goal-oriented behaviour. As the MTLW does not include provision of on-going feedback after completion of the post-training sessions, it is expected that a nil relationship between participants' degree of controlled motivation and the level of practicing the training content will be evident through a non-significant near zero (i.e. $-.1<r<.1$) correlation. In summary these research predictions are made:

Hypothesis 1.1: Controlled Motivation will not be related with Practice.[4]

Hypothesis 1.2: Autonomous Motivation will be positively and significantly related with Practice.

Experienced Utility and its relationship with on-going practice.

The perception of and judgement made by the trainee on the usefulness of the training immediately following its attendance is, according to Grossman and Salas (2011), an important and effective predictor for training transfer. They write "trainees who perceive training as useful and valuable are far more likely to apply new competencies to the workplace than those who do not" (p110). Expectancy theory supports that such training reactions provide a motivational component toward training transfer (Mathieu, Tannenbaum, & Salas, 1992). Smith, Jaysuriya, Caputi and Mammer (2008) measured *affective reactions* to a training programme (the emotional response e.g. likings or disappointment) and *utility reactions* (a cognitive measure of usefulness and applicability of the training). They confirmed a significant relationship between these variables and the trainee's intention to transfer the training into the work context. Given the emotional aspects and experiential nature of the MTLW's training method, affective

[4] Non-existence, as this hypothesised non-significant, near zero relationship, is not verifiable. Instead this hypothesis is articulated as the expected outcome based on sighted prior research. Also, despite the expected nil-relationship, controlled motivation was included in the present study, as it forms an integral part of the conceptualisation of internalisation of motivation regulation under SDT.

reactions are expected to play a significant part in the experience of this training, and therefore, the trainee's intent to transfer. Based on these prior findings, it is expected that participants' *Experienced Utility*, defined as the sum of their perception of the experience of the training, and the judgements made on usefulness and applicability outside the training context, will positively impact on transfer related behaviour and therefore lead to higher levels of utilisation of post-training support and higher levels of on-going practice.

Hypothesis 2.1: Experienced Utility will be positively and significantly related with Post-Training Support.

Hypothesis 2.2: Experienced Utility will be positively and significantly related with Practice.

Post Training Support and its relationship with on-going practice.

In their meta-analysis of training transfer research, Grossman and Salas (2011) covered a range of behaviours supporting the trainee in transferring the newly learnt skills into the work setting. Support is typically provided by the organisation, supervisors or peers, or from other already skilled people inside and outside of the organisation. The organisation, supervisors and peers can provide feedback and recognition on progress made in applying the new skills, set specific performance expectations and goals, and offer rewards for achieving training objectives. Already skilled people can provide coaching, answer questions on the content or correct errors made in the application of the skills. Frequency and the number of different people providing support were discovered as more important for training transfer than who is providing the support (Grossman & Salas, 2011). Support in the form of having frequent opportunities to use the newly learnt skills, including the provision of time to practice and adjustments to the workload during the learning phase was seen as critical to successful transfer. Other supporting behaviours, such as debriefing of the training, reflection on successes or challenges in

applying learnt materials, or follow-up on the impact of the new skills, aided transfer too. Support may also entail the provision and use of additional information and reference materials, or the follow up on trainees' progress by the instructors (Grossman & Salas, 2011). These mechanisms support the application of the newly learnt skill into the work context (generalisation), or improve temporal stability (maintenance). Several of the before mentioned aspects are covered through the MTLW's post-training components. Specifically, audio and printed reference materials are provided to all participants, and optional follow-up classes are facilitated. These classes are designed to use the new skills under the guidance of trained facilitators, clarifying content and answering questions or correcting errors in the use of the techniques. In addition, people are supported in forming self-led practice groups, based on a predefined written practice group format. For this study, the predictor variable *Post Training Support* was defined and operationalised as the degree of utilisation by the participant of the available support after attending the training. Support for the participant by the employer or the sponsoring organisation is not assessed in this study. Based on the above findings showing that support leads to improved transfer for open skills training (Blume et al., 2009) and that support, provided in multiple complementary ways, aids successful transfer of training materials (Grossman & Salas, 2011), it is predicted that:

Hypothesis 3.1: Post Training Support will be positively and significantly related with Practice.

The temporal sequence of events means that participants will first experience the training event, before they make use of any of the opportunities for post-training support. This means that trainees will likely make a decision, at least in part, on their utilisation of these post-training opportunities based on their perception of the training itself. Therefore the utilisation of post-training support is expected to mediate, rather than

independently predict the degree of practice. Attending or utilising any of the post-training support mechanisms is optional, engagement in and utilisation of these offers relies on the trainee taking initiative and typically participants will utilise all, just some parts or none of these. The meta-analyses conducted by Blume et al. (2009) as well as Grossman and Salas (2011) imply that while many factors influence the transfer of training, no single factor collectively accounts for all of the variance in transfer. It is expected that post-training support will increase successful training transfer, but that making use of the post-training support is not a necessity for transfer. Therefore, some participants achieve a degree of transfer despite forgoing parts or the entire post-training support, but participants who engage in post-training support will achieve a higher degree of transfer. In summary, it is expected that the predictor Experienced Utility will significantly relate to the variable Post Training Support and partially mediate the relationship between Experienced Utility and Practice (refer Figure 3).

Hypothesis 3.1: Post Training Support will be positively and significantly related with Practice.

Hypothesis 3.2: Post Training Support partially mediates the relationship between Experienced Utility and Practice.

Motivation to attend and its relationship with Post Training Support.

As mentioned previously, attending or utilising any of the post-training opportunities is optional. As it relies on the individual taking initiative, post-training support brings motivation of the participant into view. Post-training support is, at least in the case of attendance of the follow-up practice classes, similar to the attendance of the training itself. However, all other post-training opportunities from studying or listening to reference materials, to contacting a more experienced person, are subject to the trainee's motivation to do so. It is therefore reasonable to expect that the participant's

more stable autonomous motivation to attend the training will still apply to attending and utilising post-training support opportunities. This means that the previously hypothesized relationship between Autonomous Motivation and Practice is subject to mediation through post-training support. The more transient controlled motivation will, in line with previous reasoning, not show an effect on the degree of utilisation of post-training support. As there is a nil-relationship predicted between Controlled Motivation and Practice as well as to Post Training Support, mediation requirements as articulated by Baron and Kenny (1986) or by Hayes (2009) are not met and mediation is by definition non-existing. This leads to the following hypotheses:

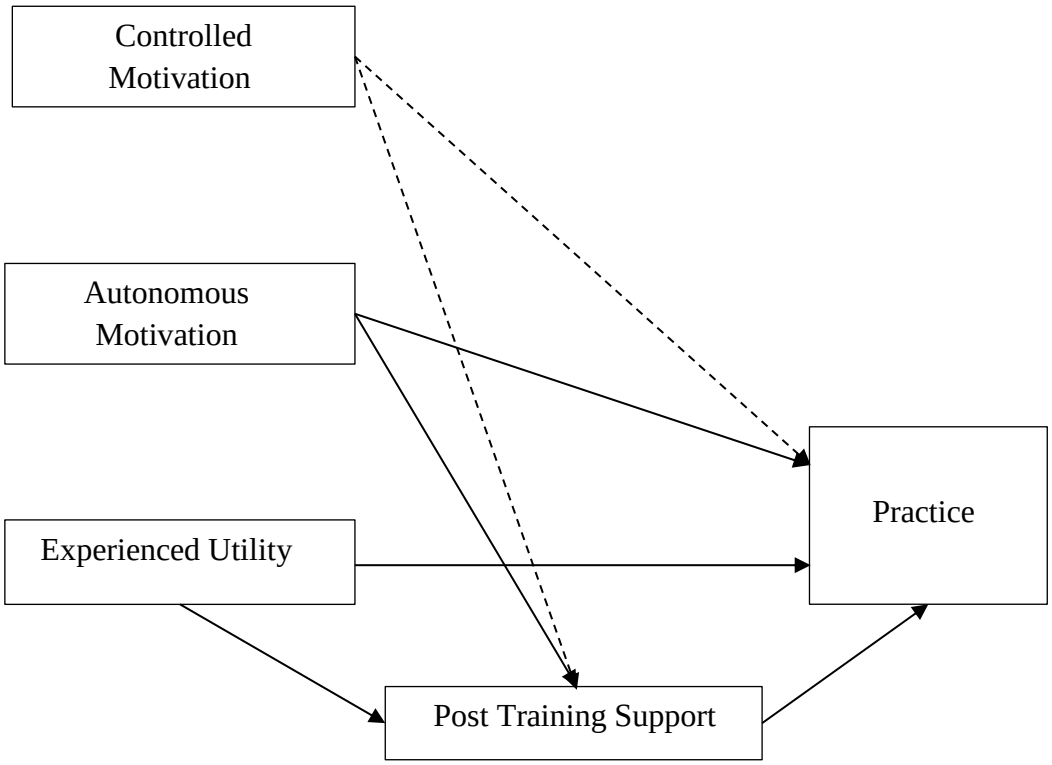
Hypothesis 4.1: Controlled Motivation will not be related with Post Training Support.

Hypothesis 4.2: Autonomous Motivation will be positively and significantly related with Post Training Support.

Hypothesis 4.3: Post Training Support partially mediates the relationship between Autonomous Motivation and Practice.

Figure 3 depicts all hypothesized pathways from the predictor variables Controlled Motivation, Autonomous Motivation, and Experienced Utility to Practice as the measure for transfer, and the pathways involving the mediator Post Training Support.

Figure 3: Researched path model leading to the utilisation measure Practice



Note: dashed lines indicate predicted nil-relationships

Evaluation of Criterion Variables and their Relationships with On-going Practice

The second step in the study was to investigate the relationship between on-going practice of the trained techniques and quantifiable *effectiveness* measures applicable to the MTLW and work settings. Three constructs were identified, relevant to open skills development as delivered by the MTLW and with demonstrable effects for the work environment. Self-awareness and mindfulness are, as outlined earlier, constructs applicable for most roles in an organisational or work setting, and shown to improve work related outcomes and reduce negative work effects such as stress. Research on and the development of Authentic Leadership (and authentic followership) is tightly linked with the construct of Positive Psychological Capital (PsyCap; Avolio & Gardner, 2005b),

and in turn PsyCap has been linked to many work related outcomes. The constructs self-awareness, mindfulness and PsyCap are discussed and hypotheses developed.

Self-awareness as potential criterion variable.

Given that self-awareness is referenced frequently in I/O research, specifically in Leadership research, and that the development of self-awareness is an intended outcome of the training, applying this construct for assessment appears fitting. However, "measuring self-awareness is not a straightforward matter" (Fletcher & Bailey, 2003, p. 397). In addition to that, there is no agreement on conceptualisation and measurement amongst researchers making it difficult to generalise study outcomes (Fletcher & Bailey, 2003). Self-awareness is commonly measured through the difference score between the self-rating and an observer rating, resulting in a low reliability due to each measure being subject to its own bias (Condon, 2011). This study on the MTLW relied on self-report instruments, but the measurement of self-awareness would require the addition of at least one observer rating for each self-rating. Such observer rating was not available for participants of this study and therefore the construct of self-awareness was not further considered as a viable measure for this study.

Mindful Awareness as criterion measure and its relationship with Practice.

Eastern traditions, namely Buddhism, have long embraced the concept of mindfulness[5] in day to day activities, and it forms one of the cornerstones of Buddhist practice (Grabovac et al., 2011). Different operational definitions of mindfulness can be found and a group of scholars, led by Scott Bishop, developed and proposed a testable definition published in 2004. According to Bishop et al. (2004) mindfulness can be operationalized as a two-component model, one involving the self-regulation of attention, and the other describing an open and curious attitude to the experience of noticing. The

[5] For a detailed description of the Buddhist Mindfulness concept see Grabovac, Lau, & Willett, Mechanism of Mindfulness: The Buddhist Psychological Model (2011)

first component describes the practice of sustaining one's attention through self-regulation on an object in one's awareness. An object refers to a physical sensation, a sensory signal, a thought or belief. Sustained attention anchors the person in their current experience "so that thoughts, feelings and sensations can be detected as they arise in the stream of consciousness" (p232). The second component refers to the attitude of curiosity taken when noticing an object of observation. The mindful individual remains aware and curious while observing whereto the mind wanders, and is taking notice of each thought, feeling or sensation that emerges in one's mind, allowing those thoughts, feelings and sensations to be noticed just as they are in the reality of the moment of observation. This practice is presumed to inhibit secondary processing triggered by those objects, such as creating interpretations, predictions, expectations or demands. In summary, the authors operationalize mindfulness as a "process of regulating attention in order to bring a quality of nonelaborative [sic] awareness to current experience within an orientation of curiosity, experiential openness, and acceptance" (Bishop, et al., 2004, p. 234).

Since the 1970s, mindfulness based interventions have grown to an accepted method in a range of therapies, one of the milestones was the emergence of a therapy called *Mindfulness-Based Stress Reduction* (Bishop, et al., 2004). In the clinical domain, meditation techniques are used to successfully treat depression by reducing ruminations while strengthening attention control, and anxiety disorders by reducing the likelihood of misinterpreting contextual stimuli, and reducing stress by improving self-management of judgemental thoughts (Schreiner & Malcolm, 2008). While the majority of mindfulness interventions are researched in the clinical field, mindfulness techniques are increasingly recognized in I/O Psychology too. Research data in the field now include specific areas such as the reduction in workplace stress through yoga and mindfulness meditation

(Wolever, et al., 2012), stress management (Hede, 2010), burnout prevention for addiction councillors (Vilardaga, et al., 2011), leadership effectiveness and improved decision quality (Sauer et al., 2011), overcoming conditioned mechanistic work related behaviour (White, 2008), psychological well-being (Brown & Ryan, 2003), and cost-benefit measurement of mindfulness practices (Hales, Kroes, Chen, & Kang, 2012). Mindfulness meditations have been linked to the development of meta-cognitive skills, increasing one's general awareness, leading to improved abilities to manage safety behaviours and cognitions (Schreiner & Malcolm, 2008). Training in mindfulness practices is increasingly offered by executive education programmes as a method to clearing one's head and increasing awareness of self (Gardiner, 2012).

Given the MTLW's aim of developing attention-regulation, awareness-raising and mindfulness practices, it is appropriate to select a measure related to this construct as a dependent variable. A suitable and validated instrument was identified in the *Mindful Attention Awareness Scale* (MAAS; Brown & Ryan, 2003; MacKillop & Anderson, 2007; Van Dam, Earleywine, & Borders, 2010). This instrument was previously used by King (2010) in evaluating the impact of the MTLW and demonstrated a statistically significant increase in mindful awareness between pre- and post-training measures. In summary it is expected that with continued practice of the techniques learnt during the training, mindful awareness will continue to increase.

Hypothesis 5: Practice will be positively and significantly related with Mindful Awareness.

PsyCap as criterion variable and its relationship with Practice.

Positive Psychology focuses on actualising human potential and the understanding of what leads healthy individuals to become happier and more productive (Luthans et al., 2007b). Within that area of Psychology the school of *Positive Organisational Behaviour*

(POB) focusses its research on positive psychological processes at the level of the individual within the organisational context (Luthans et al., 2007b). The Gallup Institute at the University of Nebraska, following the approach and theories with POB, has identified the higher order construct of *Positive Psychological Capital* (PsyCap)[6]. PsyCap relates to positive psychological work outcomes, and forms a higher order construct, aggregated as a summary measure from the constructs of *self-efficacy*, *hope*, *optimism*, and *resilience*. PsyCap and its components are considered state-like, rather than trait-like, and are therefore susceptible to and been demonstrated to respond to training and development (Luthans et al., 2007b). The combined higher order construct of PsyCap has more predictive power than any of the individual components on their own (Luthans et al., 2007), and for that reason only the higher order construct was measured and used for subsequent analyses in this study. PsyCap has already been linked to multiple positive organisation relevant outcomes such as authentic leadership (Caza, Bagozzi, Wooley, Levy, & Barker-Caza, 2010; Jensen & Luthans, 2006), employee performance (Avey, Nimnicht, & Graber-Pigeon, 2010b), performance and satisfaction (Luthans, Avolio, Avey, & Norman, 2007a), positive work attitudes and employee behaviours (Avey, Luthans, & Youseef, 2010a), and reduced employee absenteeism (Avey, Patera, & West, 2006). A recent meta-analysis of the impact of PsyCap on employee attitudes, behaviours and performance (Avey, Reichard, Luthans, & Mhatre, 2011) confirmed significant favourable relationships between PsyCap and multiple employment related constructs. Their analysis confirmed significant positive relationships between PsyCap and job satisfaction, psychological well-being, organisational commitment, organisational citizenship and several performance measures, and significant negative relationships with cynicism, turnover intentions, job stress,

[6] for the detailed perspective on PsyCap refer to Luthans, Youssef, and Avolio, Psychological Capital - Developing the Human Competitive Edge, 2007

anxiety and deviance. Furthermore, a study of an undisclosed "personal effectiveness" training utilising methods of RET, thus having at least some similarity to the training programme selected for this study, has shown a significant increase in a combined measure for self-efficacy, hope, resilience and optimism, similar but not identical to PsyCap (Demerouti, van Eeuwijk, Snelder, & Wild, 2011). The development of PsyCap continues and other criteria, such as creativity, gratitude, and forgiveness are being considered and researched (Luthans et al., 2007b), indicating a deeper philosophical congruence between PsyCap and this training programme. To establish the relevance of and a hypothesis for PsyCap as a suitable measure, the possible mechanisms and directionality of a change for each of the PsyCap components is established in the next four paragraphs:

Self-efficacy is defined as "one's conviction (or confidence) about his or her abilities to mobilize the motivation, cognitive resources and courses of action needed to successfully execute a specific task within a given context" (Stajkovic & Luthans, 1998, p. 66). PsyCap – Self-Efficacy, as a self-efficacy measure specific to the work context is based on five cognitive processes identified in Social Cognitive Theory, *symbolizing*, creating a model or mental image, *forethought*, the planning of actions, *observational cognitive processing*, observing and learning from others, *self-regulatory processing*, adjusting one's course of action based on current actualisation of self-set goals, and *self-reflective processing*, reflecting on previous actions and their outcomes (Luthans et al., 2007b). In that cognitive processes are subject to distortions and bias (Dryden, 2011), the self-efficacious individual is required to respond freely, rather than react automatically on the grounds of unconscious cognitive biases. The trained techniques for bringing unconscious behaviours to the individual's awareness and subsequent modification of the underlying limiting belief systems are, when practiced, expected to support self-efficacy.

PsyCap – Hope is derived from Rick Snyder's work and defined as "a motivational state that is based on an interactively derived sense of successful *agency* (goal-directed energy) and *pathways* (planning to meet goals)" (Snyder, Irving, & Anderson, 1991, p. 287). It refers to two components within the individual's cognitive processing, agency, the ability to set challenging and realistic goals and thriving for those goals with determination and internalised control, and pathways, generating alternative ways to reach the goals if the originally perceived path is no longer available or feasible (Luthans et al., 2007b). This state or capacity can been perceived as learnt helpfulness, enabling performance to be achieved through the creation and mapping of alternative pathways. Two techniques trained are expected to positively impact on this measure: (1) following on from modifying beliefs an emphasis is placed on choosing actions based on factual data, as opposed to acting on assumed or unchecked perceptions, and (2) planning the action steps required to attain the choices made. Both practices will creating agency and pathways within the individual and are expected to be reflected in an increased measure for hope.

PsyCap – Optimism refers to the "explanatory style that attributes positive events to personal, permanent, and persuasive causes and interprets negative events in terms of external, temporary, and situation-specific factors", individuals with a pessimistic style would attribute positive events to the situation and negative events to self (Luthans et al., 2007b, p. 90-91). However, as both attributions are plausible in many instances, a rigid optimistic attribution applied to all events would not be congruent with the reality of a workplace setting and be associated with blaming others or the situation for actions, where in fact the responsibility lies with the individual. Flexibility in attribution is required to "correctly appraise the situation" and apply the correct attribution for any event (Luthans et al., 2007b, p. 95). This process of discerning events is again reflected

in practices contained in the training programme and therefore an increase in optimism expected.

PsyCap – Resilience for the workplace is defined from a positive psychology perspective as "the capacity to rebound or bounce back from adversity, conflict, failure or even positive events, progress, and increased responsibility" (Luthans, 2002, p. 702). The resilience level depends on the cumulative and interactively created chain of experiences involving the events and risks an individual has been exposed to, the abilities present to respond to those events, and ones' perception of the quality of the outcome; contributing to this process is the individual's underlying system of values and beliefs, it shapes and guides the meaning making process on cognitions emotions and actions (Luthans et al., 2007b). Through that link to cognitive processes and balanced processing, resilience is expected to be positively influenced by this intervention.

In summary, all components of the higher order PsyCap measure are expected to positively respond to the techniques trained, and the more routinely a person is using the techniques, the more a positive impact is expected.

Hypothesis 6: Practice will be positively and significantly related with PsyCap.

Methods

Research Design & Procedure

This study was conducted using a cross-sectional design and a self-report survey to obtain quantitative from the target group. The survey was built using the electronic on-line tool Qualtrics and approved by the Human Ethics Committee of the University of Canterbury. To ensure confidentiality, electronic invitations to participate in the survey were sent by the training provider to the targeted participant pool using the provider's email system. The researcher was blind to the individuals being invited and to who

responded (or not). A review and pilot test of the survey and all instruments was performed with two psychology students, two past participants of the training and two working professionals. Their responses and feedback helped to refine and confirm design, flow and content of the survey. The survey and data collection was conducted between 7 August 2012 and 31 October 2012.

Participants

The specific population of interest were individuals in Western economies throughout all stages of their working life. This includes both sexes, all ethnic and cultural backgrounds, employment status and job types. The age of people taking this training ranges typically from as young as 16 or older than 70. For this study, the participant sample ranged from 18 to 65 years. This begins with the transition from school or university education into working life, marked by the legal age in New Zealand (Citizen Advice Buerau [CAB], 2012), and ends with individuals at the end of their working life, marked by eligibility for New Zealand Superannuation (Work and Income New Zealand [WINZ], 2012). The participant sample was comprised of individuals who have taken the MTLW in the past and was established using the electronic training records held by the training provider. A total of 139 participants answered the survey, of that 25 cases were discarded, 16 cases due to insufficient responses being provided and 9 as single data were missing, preventing the use of the selected statistical algorithms. Of the remaining 114 participants (refer Appendix A), 88 were female and 26 male, with an average age of 45.54 years (*SD*=10.62), 97 held a formal qualification from trade certificate to PhD, 98 reported working as either employed or self-employed, all but 3 currently working at least part time. The sample was comprised 109 individuals from English and 5 from other non-English speaking backgrounds. Attendance of the training was on average 4.80 years ago (*SD*=5.64).

Measures & Instruments

Control variables.

The control variables collected were as follows: (a) sex, (b) participant's year of birth, (c) country of residence, (d) highest education achieved, (e) work status and (f) time commitment in role, (g) participation and (h) year and month of participation in the MTLW. All variables had appropriate response options predefined. The variables (c) country of residence, (d) highest education achieved, (e) work status and (f) time commitment in role included an *other* option with an editable text field allowing participants to provide additional details. The variable *year of birth* was used to abort the survey if the target age was outside range.

Independent variables.

All scales were designed in a 6-item Likert response format with the anchors 1 (*strongly disagree*) to 6 (*strongly agree*) consistent with the scale format of the validated scales for Mindful Awareness and PsyCap. All scales were examined using an identical method and sequence: (1) inspection of normality and variance of each scale item, followed by (2) a principal axis factorial analysis with oblique rotation in SPSS v19 and finally (3) an alpha reliability analysis in SPSS v19. All scale items and scale validation results for this survey are listed in the appendix section of this document. The following four independent variables were used:

Trainee Motivation to participate in the MTLW was measured using a scale created for this survey (refer to Appendix B and Appendix C), reflecting SDT's premise of motivation varying along the continuum of self-regulation, from being externally pressured to attend, to attending because of the inherent curiosity to learn new things (Ryan & Deci, 2000). A similar scale was identified in the validated *Motivation at Work Scale* (MaWS), designed to measure an individual's motivation in the job using the

conceptual framework of SDT (Gagne´ et al., 2010). That scale consists of 12 items and confirmed to measure motivation in a four factor structure representing the motivation control processes intrinsic (α=.89), identified (α=.83), introjected (α=.75) and external (α=.69) (Gagne´ et al., 2010). The authors comment on the consistent challenge to psychometrically discern identified and integrated motivation regulation. However, they successfully demonstrated that these four factors aggregated into two dimensions measuring autonomous and controlled motivational state, are adequate to distinguish the corresponding motivational states. The MaWS was therefore used to guide the creation of an instrument for this study measuring participants' motivation to attend the training. Consideration was also given to the reliability of any motivational measurement, specifically as participants were asked to recall and self-report on a past event. Wording was derived from the MaWS e.g. "I *enjoy* this work very much" and corresponding items, e.g. "I *enjoyed* improving myself", were created. In total, 6 items were created to measure autonomous motivation with *intrinsic* motivation, using words such as 'enjoy', 'fun', 'like', and *identified* regulation, e.g. "I wanted to better fulfil my goals". Another 6 items were developed for controlled motivation and (a) *introjected* regulation (e.g. "I had to improve my skills to be successful") and (b) *external* regulation (e.g. "I felt pushed to attend"). The responses received led to the elimination of the item "Someone else recommended the training to me", as the scores averaged at 5.11, while all other items averaged between 2.07 and 2.99. It is likely that participants answered in reference to the training programme's personal referral marketing rather than indicating their motivational state to attend the training. No further scale optimisation was performed as subsequent scale reliability and factor analysis confirmed satisfactory scale properties. The controlled scale showed that the items loaded on two factors reflecting the regulation styles introjected and external. The autonomous scale loaded on one factor only, contrary

to the expected two factors representing the two motivation regulations included in the conceptualisation of the scale. This result is of little consequence as the study was conceptualised using the two motivational states controlled and autonomous, and no predictions were made on the level of motivation control. For that reason the factor structure for the controlled motivation scale was aggregated into one scale index, congruent with the hypotheses and approach taken by Gagne´ et al. (2010). The final scale for *Trainee Motivation Controlled* was comprised of five items, with two factors (introjected and external) explaining 70.32% of the variance, and showing sufficient reliability *(*α=.72). *Trainee Motivation Autonomous* was comprised of six items, with 55.17% of the variance explained by one factor (intrinsic-identified) and a coefficient α of .84.

Experienced Utility of the training was measured using multiple items created specifically for this survey (refer Appendix D) using guidance of a scale measuring reactions following training by Smith et al. (2008). Their scale, with a reported reliability of α=.93, consists of three items measuring affective reactions (e.g. "I am pleased I attended this training") and six items measuring utility reactions (e.g. "This training was of practical use"). Examples of utility items used in this study are "This training was useful" or "I learnt new skills helpful for my job", examples for affective items are "I am pleased I attended this training" or "I was put off by this training". Through review and pilot testing, three scale items covering affective and four items covering utility reactions were selected. The final instrument showed only one factor, instead of the expected two, accounting for 68.74% of the variance. High item co-variances between items indicate that people's perception of the experience goes hand in hand with their judgement of the value offered. The scales' alpha reliability was calculated as .93. As all hypotheses were

developed using the aggregated construct, rather than its dimensions, the single factor result has not impacted on the study.

Post Training Support utilised from other participants and subject matter experts following the training was measured using a five item scale designed to specifically reflect the post-training support offered by the training provider. It included items such as "I attended all follow up classes" or "I listened to the audio support materials", for details refer to Appendix E. The analysis returned a single factor accounting for 51.45% of the variance and reliability coefficient α=.76.

Practice was measured using a scale specifically designed to assess to what extent the specific training content and tools provided are used by the participant. This included five items such as "I regularly make time to practice" worded to measure temporal frequency of practice and six items were worded to assess extent of practice e.g. "I work with a support partner" (refer to Appendix F). The reliability analysis indicated high Cronbach α of .93. However, the scale item "I use a dedicated personal journal" had a low communality h^2 of .28 and was removed to create equal number of frequency and extent items. The final eight item scale returned a single factor accounting for 64.53% of the variance and coefficient α of .93. While the scale was worded to tap into two dimensions of Practice, the resulting single factor structure may indicate that frequency and extent of practice are very closely correlated, or that semantics of the scale items is not sufficiently refined to return two discernible dimensions.

Dependent variables.

Mindful Awareness and PsyCap were measured using existing and previously validated instruments. All scales were assessed using the same protocol as stated for the independent variables.

Mindful Awareness was measured using a shortened version of the *Mindful Attention Awareness Scale* (MAAS), developed with 15 scale items and validated by Brown and Ryan (2003) across seven different samples, showing a coefficient α ranging from .82 to .87. The item pool was originally created to reflect mindful and mindless states, but the final scale consist of mindless states only, as those states are more likely to be recognized by most people (Brown & Ryan, 2003). High MAAS scores indicate higher levels of mindful awareness and reduced automaticity of behaviour. The scale has later been validated by MacKillop and Anderson (2007) showing a Cronbach's α of .89 and further analysed by Van Dam et al. (2010) using item response theory. In this latter analysis it was suggested that five items were providing approximately two-thirds of the total information of all 15 items, while showing clear discriminative power on the trait expression without significantly altering scale reliability. To limit the length of the questionnaire for this study, only the five items as identified by Van Dam et al. (2010) were used (refer Appendix G). Scale properties in this study were confirmed with a single factor accounting for 66.86% of the variance and a Cronbach's α=.87.

Positive Psychological Capital (PsyCap) was measured using the 24 item *Psychological Capital Questionnaire* PCQ developed by Luthans et al. (2007b). The PCQ is copyright protected and the disclosure of items restricted through Mind Garden Incorporated (2012). The scale provides a single measure on the construct PsyCap composed of the individual measures for the subscales *work related self-efficacy*, *work related hope, work related resilience* and *work related optimism*. The principal axis factor analysis returned a five factor structure, explaining 64.15% of the variance. The structure collapsed into the expected four factors after PCQ item 15[7] was removed from the analysis. This item's meaning was questioned several times during the pilot study.

[7] as referenced by (Luthans, Youssef, & Avolio, Psychological Capital - Developing the Human Competitive Edge, 2007b, p. 238)

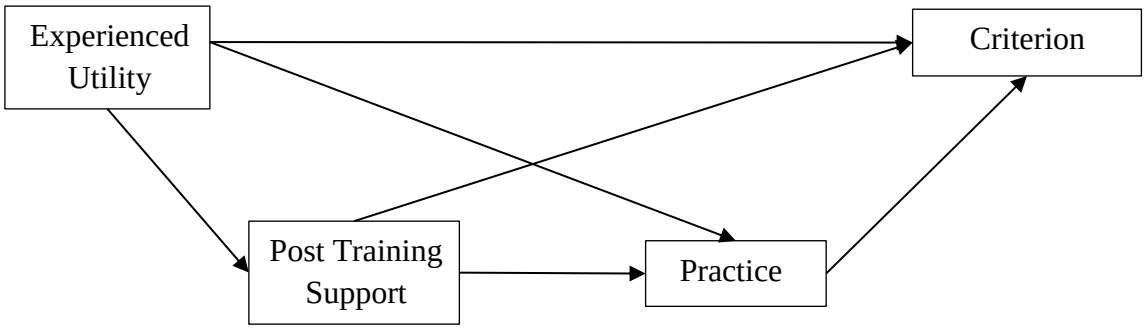
However, to retain the integrity of the PsyCap measure and comparability of results with previous studies, the full 24-item scale, including item 15, was used for all analyses within this study. Reliability for the scale is reported by Luthans et al. (2007a) as ranging between .88 and .89. In this study, the reliability of the scale was α=.93. For details of the scale's items and their wording refer to Luthans, Youssef, and Avolio, Psychological Capital - Developing the Human Competitive Edge, (2007). The analysis results for this study are listed in Appendix H.

Analysis Procedures

Descriptive statistics, as means, standard deviation or population characteristics, followed by bivariate correlations between all continuous variables were calculated. As these results highlighted significant relationships with the control variables Age and Elapsed Time, all subsequent analyses controlled for these two variables. The hypothesized relationships, as shown in Figure 3, were tested first using the MEDIATE procedure release 170712 for SPSS (Hayes, Andrew F; Hayes, PhD., 2012b). This regression based procedure has been designed to assess the direct, indirect and total effects between multiple predictor variables, a single dependent variable and multiple mediating variables, while also controlling for multiple selectable variables. Significance of the indirect (mediated) paths is indicated by 95% confidence intervals not including 0, calculated using bootstrapping (Hayes, 2009; Hayes, Andrew F; Hayes, PhD., 2012b). The procedure returns unstandardized regression coefficients. In the first step of this analysis, the predictor variables were Controlled Motivation, Autonomous Motivation, and Experienced Utility, the mediator was Post Training Support, and Practice was the dependent variable. The procedure controlled for the variables Age and Elapsed Time. To assess the relationship between Practice and the dependent variables Mindful Awareness and PsyCap, the PROCESS procedure release 130612 for SPSS was used

(Hayes, Andrew F; Hayes, PhD., 2012b). This procedure is different to the MEDIATE procedure in that it allows for different combinations of mediation and moderation variables being connected together. The configuration of one predictor variable and a serial connection of multiple mediators to a single dependent variable as per PROCESS Model 6 (Hayes, 2012a) was used in the analyses. To ensure that not only indirect effects, transmitted through subsequent mediators, but all direct effects from the predictor variables are taken into account, the path diagram as per Figure 4 is conceptualised for the analysis. Two separate analyses were performed for the dependent variables Mindful Awareness and PsyCap by connecting the predictor variable Experienced Utility to the first mediator Post Training Support, then connected onto the second mediator Practice, and Practice in turn connected to the dependent variables Mindful Awareness and PsyCap respectively. As before, Age and Elapsed Time were controlled for. The variables Controlled Motivation and Autonomous Motivation did not show significant relationships to any of the other predictor or moderating variables and were therefore not considered as independent predictors in this analysis. Both motivation variables were added as controls next to Age and Elapsed Time.

Figure 4: Researched relationships of effectiveness measures to the criterion variable



Results

Descriptive Statistics and Bivariate Correlations

All calculated descriptive statistics and bivariate correlations, together with the reliability coefficients of all instruments used, are displayed in Table 1. Noted was the high mean of 5.20 for Experienced Utility, indicating that a large proportion of the participants in this study experienced the training as positive and perceived it as useful. Also noted was the standard deviation of .75 of the PsyCap measure, it remains unclear if this lower variability is an accurate reflection of the participant group, or indicative of a generally lower variability due to scale characteristics. Histograms supported normality requirements, as well as variability of the measures and reliabilities of the scales were sufficient for analysis.

Several statistically significant correlations involving the control variables Age and Elapsed Time were observed: (a) there was a positive and significant correlation between Age and Elapsed Time (r=.34, p<.001), reflecting that a large proportion of the participants have taken the training a while back and have since aged; (b) a positive correlation between Age and Mindful Awareness (r=.28, p<.001) and between Elapsed Time and Mindful Awareness (r=.31, p=.003), indicating that mindful awareness increased with age or that people who used the tools for longer showed higher mindful awareness; and (c) a correlation between Elapsed Time and Post Training Support (r=.39, p<.001), indicating that people who were using the trained tools also tended to engage in and used the available support. Significant relationships were also noted between Elapsed Time and Practice (r=.26, p=.005) as well as between Age and Practice (r=.21, p=.028), congruent with the before mentioned link between Age and Elapsed Time. This triangular relationship between Age, Elapsed Time and Practice suggests that people who stayed with the MTLW techniques for longer tended to also use them. The correlation

between Elapsed Time and Experienced Utility (r=.22, p=.018) would indicate that the perception of the training experience changed toward a more positive evaluation the longer back the training was for the participant. There are different possible reasons for this observation. A biased response, due to self-serving motives, may have been given by people using the techniques for longer. It is also possible that the training's quality, specifically the perception of value and benefits received by participants, has declined over the years. Finally it is plausible that a change in training quality and a biased response were jointly responsible. The correlations involving Age, Controlled Motivation and Mindful Awareness will be detailed later.

Table 1: Correlations, means, standard deviations for all variables and alpha reliability estimates for the instruments used in the study.

Variable	1	2	3	4	5	6	7	8	9	*M*	*SD*	*α*
1 Age [y]	1									45.54	10.62	-
2 Elapsed Time [y]	.34***	1								4.80	5.64	-
3 Controlled Motivation	-.21*	-.18	1							2.47	1.04	.72
4 Autonomous Motivation	.08	-.03	.07	1						4.59	1.03	.84
5 Experienced Utility	.15	.22*	-.12	.19*	1					5.20	1.01	.93
6 Post Training Support	.13	.39***	-.07	.16	.58***	1				4.56	1.22	.76
7 Practice	.21*	.26**	-.09	.22*	.50***	.47***	1			3.79	1.47	.93
8 Mindful Awareness	.31***	.28**	-.34***	.06	.14	.13	.26**	1		4.33	1.02	.87
9 Psychological Capital	.05	.20*	-.23*	.22**	.17	.09	.35***	.32***	1	4.64	.75	.93

Note: Pearson correlation coefficient *r* is significant on a level of *$p<.05$; **$p<.01$; ***$p<.001$ (2-tailed). Sample size $n=114$

Direct and Indirect Effects on the Variable Practice

The predictor variables Autonomous Motivation and Experienced Utility were identified and hypothesised to form pathways mediated through Post Training Support to the on-going utilisation of training content, while Controlled Motivation was expected to not show pathways to Practice. These pathways were assessed using the MEDIATE procedure. The MEDIATE (as well as the PROCESS) procedure returns unstandardized regression coefficients *b* and standard errors *SE*. As all scales were designed using an identical number of response options, and the control variables are both scaled in years, interpretation of the results is easier when using unstandardized coefficients compared to standardised results. The results are listed in Table 2 and explained for the pathways for each predictor variable. The corresponding hypotheses are referenced in brackets, for example hypothesis 1.2 is shown as (H1.2).

Table 2: Analysis of the mediated pathways leading to Practice

	Path Coefficients		Indirect Effects	
	to PTS	to Practice	Estimate	95% CI
Age	-.005 (.55)	.01 (.30)		
Elapsed Time since training	.06 (<.001)	.02 (.42)		
Controlled Motivation [CM]	.03 (.70)	-.01 (.90)		
Autonomous Motivation [AM]	.08 (.35)	.17 (.15)		
Experienced Utility [EU]	.61 (<.001)	.45 (.002)		
Post Training Support [PTS]		.28 (.026)		
R^2	.41	.33		
Total			.07	.01, .16
CM -> PTS -> Practice			.01	-.04, .08
AM -> PTS -> Practice			.02	-.02, .10
EU -> PTS -> Practice			.17	.03, .34

Note: Results created with sample size n=114 using MEDIATE procedure with 10,000 bootstraps, stated as unstandardized regression coefficients b; p values in parentheses; stated are bias-corrected bootstrap 95% confidence intervals;
Model summary R^2 = .30, Adj R^2 = .26, $F(5, 108) = 9.14$, $p < .001$

Controlled Motivation was hypothesised to not relate with Practice (H1.1) or with Post Training Support (H4.1), consequently mediation through Post Training Support was not predicted. The results support the predicted nil-relationships between Controlled Motivation and Practice (b=-.01, p=.90), and between Controlled Motivation and Post Training Support (b=.03, p=.70). These results support hypotheses 1.1 and 4.1 in that the degree of Controlled Motivation for attending the training does not relate to the degree of on-going practice, nor to the degree of utilisation of post-training support.

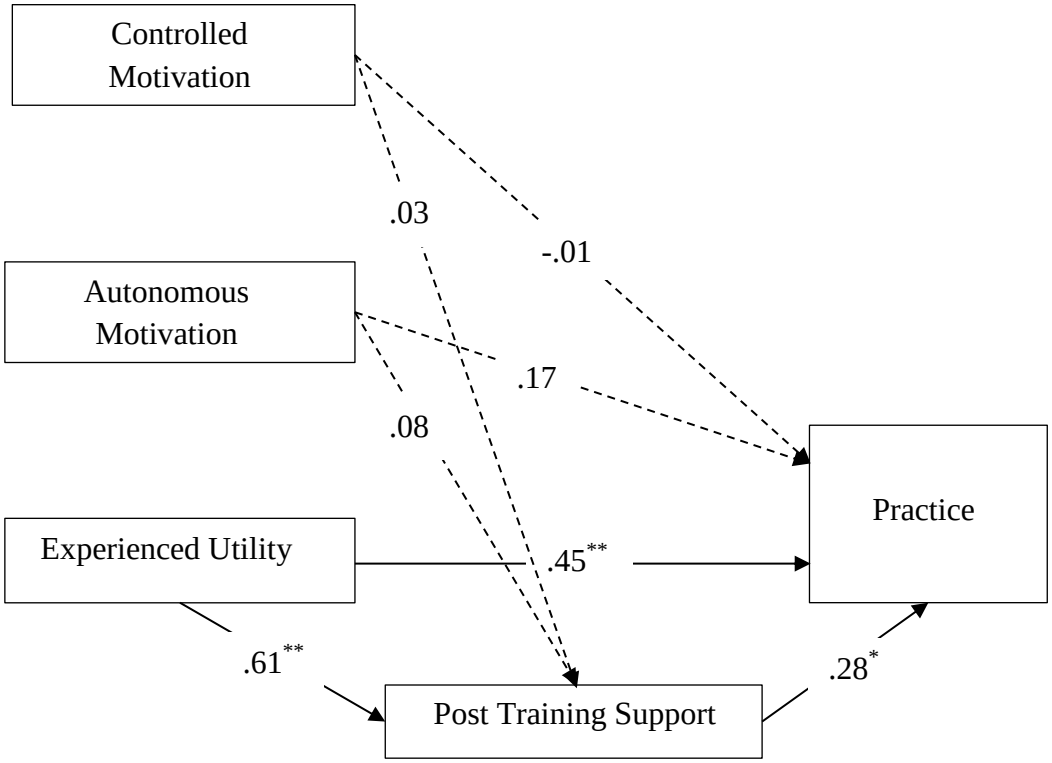
Autonomous Motivation on the other hand was predicted to show positive and significant relationships with Practice (H1.2) and Post Training Support (H4.2), and further that Post Training Support would mediate its relationship with Practice (H4.3). Results indicative of the expected relationship with Practice (b=.17, p=.15) were observed, but failed to reach statistical significance. Therefore the results fail to support hypothesis 1.2. The results for the relationship between Autonomous Motivation and Post Training Support (b=.08, p=.35) fail to support hypothesis 4.2. Consequently the results concerning the expected mediated pathway between Autonomous Motivation and Practice ($b_{indirect}$=.02, *95%CI* [-.02, .10]) fail to support hypothesis 4.3. Combined, these results indicate that the original motivational factors for attending the training, controlled and autonomous, have not carried through to form motivation for transfer related behaviours.

Experienced Utility was hypothesised to relate positively and significantly with Post Training Support (H2.1) and with Practice (H2.2). In addition, Post Training Support was expected to relate with Practice (H3.1) and to mediate the relationship between Experienced Utility and Practice (H3.2). The results for the relationship between Experienced Utility and Post Training Support (b=.61, p<.001) strongly support hypothesis 2.1. Results also support hypothesis 2.2, in that the perceived value and

benefits received in the training were positively related to the degree of on-going practice (b=.45, p=.002). The trainee's utilisation of post-training support is, as expected, positively and significantly related with Practice (b=.28, p=.026), supporting hypothesis 3.1. Moreover, the results for the indirect path from Experienced Utility through Post Training Support to Practice ($b_{indirect}$=.17, *95%CI* [.03, .34]) are in support of the hypothesis 3.2 of Post Training Support acting as mediator in the path. This means that the trainee's perception of value and benefits received from this training was the most important predictor for not only utilisation of support options for training, but for on-going use of the techniques trained during the MTLW.

In summary (refer Figure 5), the measured motivational factors did not predict transfer. However, 63% of the variance observed in the on-going utilisation of the training content was accounted for combined by Experienced Utility and Post Training Support. For that reason the two predictor variables for controlled and autonomous motivation were discarded as predictors, but retained as control variables for the next part of the analysis.

Figure 5: Results of the analysis for predictors of Practice and mediation through Post Training Support



Note: Shown are unstandardized regression coefficients *b*, dashed lines indicate non-significant findings, *p<.05, **p<.01 (2-tailed)

Pathways toward Mindful Awareness and PsyCap

To satisfy the second objective of the study, the identification and testing of suitable constructs to measure work-related outcomes of training, the relationships between training variables, and Mindful Awareness and PsyCap were assessed. Congruent with the statistical technique used in the prior analysis, the regression based PROCESS procedure was employed to separately calculate the path coefficients from the predictor variable Experienced Utility to Post Training Support as the first mediator, continued on to Practice as the second mediator toward the dependent variable Mindful Awareness and PsyCap, respectively. The results for Mindful Awareness are shown in Table 3, and for PsyCap in

Table 4.

Table 3: Analysis results of the pathways leading to Mindful Awareness

	Path Coefficients			Indirect Effects	
	to PTS	to P	to MA	Estimate	95% CI
Age	-.005 (.57)	.01 (.28)	.02 (.056)		
Elapsed Time since training	.06 (<.001)	.02 (.38)	.03 (.30)		
Controlled Motivation	.03 (.73)	-.01 (.90)	-.26 (.002)		
Autonomous Motivation	.08 (.36)	.17 (.14)	.04 (.64)		
Experienced Utility [EU]	.61 (<.001)	.45 (.003)	-.02 (.89)		
Post Training Support [PTS]		.28 (.02)	-.05 (.58)		
Practice [P]			.13 (.068)		
R^2	.41	.33	.23		
EU -> PTS -> MA				-.03	-.12, .070
EU -> P -> MA				.06	.003, .16
EU -> PTS -> P -> MA				.02	.001, .077

Note: Results created with sample size n=114 using PROCESS procedure with 10,000 bootstraps, stated as unstandardized regression coefficients *b*; p values in parentheses; stated are bias-corrected bootstrap 95% confidence intervals; Total effect EU->MA .035 (.76); Model summary R^2 = .21, $F(5, 108) = 5.59$, $p < .001$; The results for the mediated path from Experienced Utility to Practice were identical to the ones obtained in the previous analysis (see Table 2) and therefore, for clarity of presentation, are omitted from tables three and four.

Table 4: Analysis results of the pathways leading to PsyCap

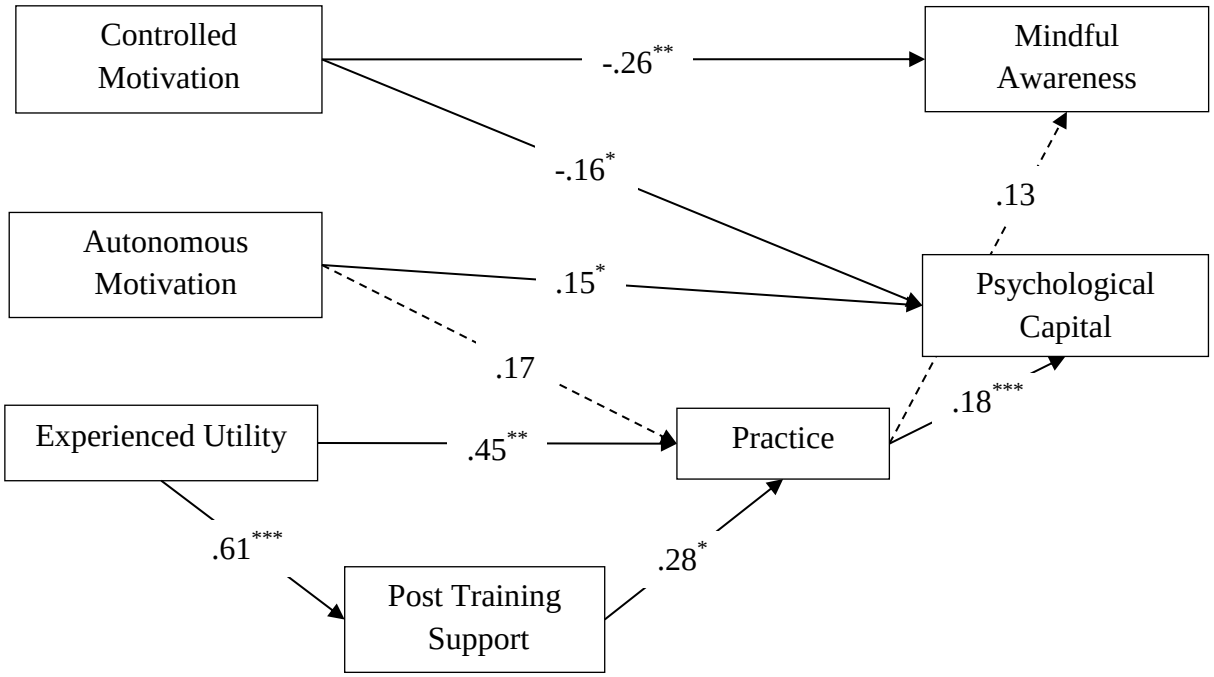
	Path Coefficients			Indirect Effects	
	to PTS	to P	to PsyCap	Estimate	95% CI
Age	-.005 (.57)	.01 (.28)	.009 (.24)		
Elapsed Time since training	.06 (<.001)	.02 (.38)	.02 (.074)		
Controlled Motivation	.03 (.73)	-.01 (.90)	-.16 (.015)		
Autonomous Motivation	.08 (.36)	.17 (.14)	.15 (.045)		
Experienced Utility [EU]	.61 (<.001)	.45 (.003)	.01 (.92)		
Post Training Support [PTS]		.28 (.02)	-.11 (.15)		
Practice [P]			.18 (.007)		
R^2	.41	.33	.23		
EU -> PTS -> PsyCap				-.07	-.17, .014
EU -> P -> PsyCap				.08	.019, .17
EU -> PTS -> P -> PsyCap				.03	.007, .079

Note: Results created with sample size n=114 using PROCESS procedure with 10,000 bootstraps, stated as unstandardized regression coefficients b; p values in parentheses; bias-corrected bootstrap 95% confidence intervals; Total effect EU-PsyCap .05 (.55); Model summary R^2 = .15, $F(5, 108) = 3.71$, p = .004; The results for the mediated path from Experienced Utility to Practice were identical to the ones obtained in the previous analysis (see Table 2) and therefore, for clarity of presentation, are omitted from tables three and four.

Practice was hypothesised to relate positively and significantly with Mindful Awareness (H5). The results show evidence of the positive relationship, but failed to reach statistical significance considering p< .05 (*b*=.13, *p*=.068). The results of the indirect paths show mediation between Experienced Utility and Mindful Awareness through Practice alone ($b_{indirect}$=.06, *95%CI* [.003, .16]) and a serial mediation through Post Training Support and Practice ($b_{indirect}$=.02, *95%CI* [.001, .077]). In summary, the data collected fail to support the relationship between Practice and Mindful Awareness as per hypothesis 5. Not hypothesised was the negative relationship between Controlled Motivation and Mindful Awareness (*b*=-.26, *p*=.002), suggesting that people who showed higher degrees of external and introjected motivation regulation had a tendency to a lesser degree of mindful awareness. This finding will be discussed in detail later.

Practice was predicted to relate positively and significantly with Positive psychological capital or PsyCap (H6). Hypothesis 6 is supported by the results (*b*=.18, *p*=.007). The data show a mediation through Practice ($b_{indirect}$=.08, *95%CI* [.019, .17]) and through Post Training Support and Practice ($b_{indirect}$=.03, *95%CI* [.007, .079]). Unexpected was the negative relationships between Controlled Motivation and PsyCap (*b*=-.16, *p*=.015) and the positive relationship between Autonomous Motivation and PsyCap (*b*=.15, *p*=.045). These results will be discussed in a later part of this document.

Figure 6: Summarised path model from predictor to criterion variables



Note: shown are unstandardized coefficients *b*, dashed line indicates non-significant path, * $p<.05$, ** $p<.01$, *** $p<.001$

The model retains the paths from Autonomous Motivation to Practice ($b=.17$, $p=.15$) and between Practice and Mindful Awareness ($b=.13$, $p=.068$) as both paths are theoretically plausible, show non-trivial path weights and low p levels warranting further research.

Discussion

This study commenced with three stated objectives: (1) to identify applicable constructs and corresponding instruments that predict transfer of the training content, (2) to identify and quantify applicable work related constructs for measuring effectiveness of the trained practices, and (3) to inform the design of an evaluation study on the training programme.

Summary of the Results

Table 5 details all hypotheses tested in this study and the corresponding results.

Table 5: Summary and conclusions on all hypotheses in this study

#	Hypothesis	Result
1.1	Controlled Motivation will not be related with Practice.	Supported
1.2	Autonomous Motivation will be positively and significantly related with Practice.	Failed to support
2.1	Experienced Utility will be positively and significantly related with Post Training Support.	Supported
2.2	Experienced Utility will be positively and significantly related with Practice.	Supported
3.1	Post Training Support will be positively and significantly related with Practice.	Supported
3.2	Post Training Support partially mediates the relationship between Experienced Utility and Practice.	Supported
4.1	Controlled Motivation will not be related with Post Training Support.	Supported
4.2	Autonomous Motivation will be positively and significantly related with Post Training Support.	Failed to support
4.3	Post Training Support partially mediates the relationship between Autonomous Motivation and Practice.	Failed to support
5	Practice will be positively and significantly related with Mindful Awareness.	Failed to support
6	Practice will be positively and significantly related with Psychological Capital PsyCap.	Supported

Predictors for training transfer.

The first objective of this study was achieved by establishing the pathway for training transfer. Experienced Utility emerged as the main predictor of transfer, directly to Practice and indirectly through Post Training Support. At the same time, neither controlled nor autonomous motivation to attend the training were valid predictors for the transfer-related activities of utilising post-training support opportunities and on-going practice of the techniques trained. The nil-relationship between Controlled Motivation and outcomes is in line with previous findings by Koestner et al. (2008) who showed that controlled motivation has no relationship with goal progress. The authors concluded that controlled motivation in an environment that does not readily provide feedback related to goal progress "will exert a less stable influence on behaviour over time and across situations" (p. 1226). This is true with the MTLW training programme as participation is typically initiated by the individual rather than by the sponsoring organisation, thus the work environment is unlikely to produce cues on progress. It is also plausible that individuals whose motivation to participate in the training was primarily through controlled regulation, have lost interest in the training programme and may not have responded to the survey.

Contrary to expectations was that Autonomous Motivation did not show a significant relationship with the transfer related constructs Post Training Support and Practice respectively. This was surprising as the reviewed literature points to a strong relationship between a similarly operationalized construct of autonomous motivation with goal progress (Koestner et al. 2008), also Deci and Ryan (2008) showed greater persistence of autonomous motivation over time, and Grant et al. (2011b) referred to autonomous motivation providing better quality of initiative. While there was an observable effect, statistical significance of the relationship between Autonomous

Motivation with Practice was outside accepted thresholds. However, given the strength of theoretical support for Autonomous Motivation as a predictor, the magnitude of the effect found, it appears likely that the failure to discover the effect is due to limitations in this survey. Specifically the method of asking for retrospective assessment of pre-training motivation, rather than due to the absence of a relationship, has likely contributed to this outcome. The relationship of Autonomous Motivation with Post Training Support was weaker compared to its relationship with Practice. This finding could be indicative of a lesser relationship, or alternatively point toward Experienced Utility being a moderator in the relationship between Autonomous Motivation and Post Training Support. It is plausible that only if Experienced Utility was high, the trainee's autonomous motivation to attend the training would have carried through and formed a motivational component to practice the training content after the training. A longitudinal study, measuring the different variables on more than one occasion, is required to clarify the influence motivation has on training transfer. Given the before mentioned limitations, further investigation into and ultimately clarification of these relationships is feasible and warranted.

Strong support was found for the direct relationship between Experienced Utility and Practice, and also for the partial mediation of this relationship through Post Training Support. These relationships are congruent with prior findings such as Grossman and Salas' (2011) meta-analytical work that identified perceived utility, error management, opportunity to practice and support were important predictors for training transfer, and also findings by Blume et al. (2011) that supportive environments proved important, especially with open skills training. Tan, Hall and Boyce (2003) found that by separating the measures for affective and cognitive reactions to a closed skills training, the quality of prediction of the training effect did increase. They further suggested to assess negative

affective reactions (i.e. reverse coded affective items such as "The training program [sic] was conducted poorly") separately as they were the strongest predictor of skills and behaviour learning. In this study one item was reverse coded and included in the one-dimensional Expected Utility measure. Adopting Tan and colleagues' (2003) suggestion in future studies, would lead to a multi-dimensional instrument with the potential benefit of better predictive qualities. Important was the finding that the relationship of Experienced Utility with Practice is partially mediated by Post Training Support. It demonstrates that training transfer, as measured through the utilisation of the trained content, is aided by utilisation of post-training support, but not dependent upon it. It is therefore of interest to and under control of the training provider to create a positive training experience and demonstrate the benefit of the training during the training and the post-training support sessions. However, post-training support can also be provided, facilitated, and supported by the training provider, increasing the likelihood of successful transfer. These findings are congruent with the findings by Grossman and Salas (2011) and confirm that transfer of this open skills training follows a more common processes.

Mindful Awareness as measure of effectiveness.

The first criterion measure selected was Mindfulness Awareness measured via the validated Mindful Attention Awareness Scale (MAAS). The results in this study, while showing a relationship between Practice and Mindful Awareness, failed to reach significance levels required to support hypothesis 5. Unexpected was the strong and significant correlation between Mindful Awareness and Controlled Motivation. The absence of significant correlations between the individual items on both scales lessened the likelihood that item semantics may have created an artefact. The analysis of pathways suggested that, while Practice may have contributed to the observed increase in Mindful Awareness, the observed changes were best explained by variance in Controlled

Motivation. Prior research on the MAAS focused on scale validation (Brown & Ryan, 2003; MacKillop & Anderson, 2007; Van Dam et al, 2010) and no motivation-MAAS relationship analyses or data were reported. A wider literature search found comments on a relationship between motivation constructs and measures for mindfulness. Deci and Ryan (2008) theorised that mindfulness techniques may lead to the development of a more *autonomous causality orientation*. This construct, related to autonomous motivation, describes a more general motivation orientation, including how individuals are self-determined across different contexts. Ryan and Brown (2003) suggested that maintaining one's self esteem through self-worth contingencies, such as performance or appearance, is similarly externally controlled as *controlled causality orientations* in motivation, and that such self-worth contingencies are challenged through mindfulness practices. Wording of the MAAS items tend to inquire the degree of awareness given to external stimuli, and could therefore tap into the processes mentioned by Ryan and Brown (2003). On those grounds, the findings obtained may be interpreted as extrinsic motivation, combined with external motivation regulation, coincides with a reduced attention to external stimuli. However, different aspects raised are to be taken into account first as measuring and quantifying mindfulness is inherently difficult (Grossman P. , 2008). The author detailed six specific issues: (1) lack of a common understanding and definition of mindfulness, (2) limited knowledge of the concept by people developing scales, (3) significant differences in the interpretation of semantics, possibly even dependent on the degree in mindfulness of the respondent, (4) discrepancy between self-perceived and actual degree of mindfulness, (5) tendency for response biases by long term practitioners, and (6) consequential issues with validating mindfulness instrument (for details refer to Grossman P. , 2008). Van Dam et al. (2010) echo point three, in that the MAAS measures a construct better termed *automatic inattentiveness*, describing an

individual's state of being, characterised by unconscious automatic or habitual functioning. Wording of the MAAS items gives validity to that argument, and by tapping into a single construct of automatic inattentiveness, the instrument does not measure the operational complexity of mindful awareness. The aspects raised by Grossman together with the results of this research on criterion variables for this training, question the use of the shortened version of the MAAS for future research. An instrument developed on the basis of a more comprehensive conceptualisation of mindfulness, such as the *Five Facets Mindfulness Questionnaire* (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006; Baer, et al., 2008) may yield results that are easier and more conclusively to interpret. The FFMQ assesses five dimensions within the overall construct of mindful awareness: (1) non-reactivity to inner experiences, with questions such as "I watch my feelings without getting lost in them"; (2) observing, noticing and attending to sensations, perceptions thoughts and feelings through items such as "I pay attention to sounds such as clocks ticking, birds chirping, or cars passing"; (3) acting with awareness versus automatic pilot, and concentration versus distraction, a sample question as "It seems I am running on automatic without much awareness of what I am doing", or "I am easily distracted"; (4) describing and labelling with words, through items as "I'm good at finding the words to describe my feelings"; and finally (5) non-judging of experience with questions such as "I tell myself that I shouldn't be feeling the way I'm feeling". This scale covers many more facets of the construct mindful awareness and is suggested to be used instead of the MAAS in subsequent research. The benefits of assessing the outcome using a more comprehensive construct outweigh the disadvantage of using a questionnaire containing 31 items instead of the five used here. In summary the hypothesised relationship between Practice and Mindful Awareness was not supported by

the data obtained, but research should be continued with a different instrument and study design.

Positive Psychological Capital as measure of effectiveness.

Positive Psychological Capital (PsyCap) was selected as the second criterion variable, based on its strong link with the positive psychology, authentic leader and followership, and the assumption that it is a trainable state like construct (Luthans et al. 2007b). Results for this study were congruent with the latter assumption by showing a significant positive relationship between Practice and PsyCap. Although this does not confirm that an individual's degree of PsyCap has changed as a consequence of this training and continued practice of the techniques, the results are congruent with the theoretical arguments made for such proposition. The selection of this measure for further research on the MTLW or similar training programmes for open skills development was supported.

Unpredicted relationships were found for the constructs of Controlled and Autonomous Motivation, with PsyCap, in both instances showing a path with statistical significance and near equal weight. However, opposite signs mean that higher levels of PsyCap coincide with higher levels of autonomous motivation, but lower levels of controlled motivation. Prior research by Grant et al. (2011b) identified that these two motivation constructs, grounded in SDT, are two separate constructs and may be active at the same time. The lack of a correlation between the two motivation constructs observed in this study suggest that the relationships of the motivation measures with PsyCap are independent of each other. A literature search aimed at identifying material linking SDT to PsyCap did not reveal any direct study, but identified two studies successfully linking self-efficacy, a component of PsyCap, with training motivation. One study (Carlson, Bozeman, Kacmar, Wright, & McMahan, 2000) confirmed a relationship between

training related self-efficacy and training related motivation, while Chiaburu and Marinova (2005) identified a relationship between pre-training motivation and training related self-efficacy. Besides this, it is intuitively appealing to suggest that more internalised motivational regulation is reflected in a more self-efficacious, hopeful, resilient and optimistic mind-set, in turn reflected by a higher PsyCap score, while the more externally-held, controlled motivation regulation may reflect a less empowered and less positive outlook of the individual, thus showing a lower PsyCap score. The previously mentioned comments by Deci and Ryan (2008) related to causality orientations, support such proposition. The autonomous causality orientation is closely related to autonomous motivation and has been shown to positively relate to psychological health and well-being; the corresponding controlled causality orientation on the other hand is linked to more rigid functioning and reduced well-being (Deci & Ryan, 2008). However, within the design limitations of this study, any interpretation is best suspended as sequence of events, timing or even causality cannot be ascertained. The questions to be answered are therefore: are people who are learning for reasons of joy and identified values, also people who have a tendency to live a life with a positive outlook? Or are people becoming more autonomously motivated as they develop increased psychological capital? Almost certain is that the construct of Positive Psychological Capital is a valid criterion measure for the effectiveness of the MTLW and recommended for future research. By using comparative measures between pre-training and post-training PsyCap it may be possible to demonstrate, that PsyCap is subject to training and to what degree the MTLW is enabling people to increase their positive psychological capital. So far the results support continuation of such research.

Limitations of this Study

This study was designed to provide a framework for transfer effectiveness of the MTLW as an open-skills training. The study was conducted using a cross-sectional design with self-report instruments for obtaining data. In doing so, data are subject to several limitations. Two important response errors and biases were considered. First, trainees were asked to recall a past event and rate the motivation for attending and the initial value and benefits received from the training. Therefore both measures are subject to memory distortions and confirmation bias, a tendency of people to seek, select or interpret data so that it is in-line with their current beliefs (Allan, 2011; Nickerson, 1998). Both erros may therefore have influenced the relationships for training transfer. Particularly, people who have found the MTLW helpful in the long term may have overstated the measure for experienced utility. This means that the strength of the found relationships with Experienced Utility may be slightly overstated, but unlikely to put in question that the relationships exist. Secondly, as all variables were obtained at the same point in time using one questionnaire, a systemic method effect produced by measurement context may exist in the data (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The risk posed by such biases was managed as best as possible by careful examination of the response variance as well as relationship strength and significance level. The data received suggests that respondents did use the full range of response options and selected different response options within all constructs. This suggests that respondents at least discerned the meaning of the questions, rather than just ticking the 'best' available. A further limitation to note is that the study attracted respondents with different exposure, experience and length of association with the programme. As a result, there were not an equal percentage of the different MTLW cohorts, people who have attended one specific training event, represented. This factor was partially addressed by

controlling for age and elapsed time since attending the training in all regression analyses. While the results created a starting point for efficacy research of this awareness training programme and the development of relevant open skills, the findings may be applicable to similar group based trainings, but only to a lesser degree generically applicable to other open skills training programmes. Due to the anonymity requirement in approaching participants, knowledge about survey response rates is not available. As the survey invitation was sent by email, delivery issues such as SPAM filtering or missing the invitation in one's inbox are possible and even likely. Therefore not having ability to confirm the receipt of the invite, trace the progress of responses, and also not being able to remind people about their participation in the survey, was significantly limiting the data capture process in this study. The total number of responses available was less than expected and resulted in some limitations to the statistical power of the analysis. Specifically, results with observable, but low effects, such as the relationship between Practice and Mindful Awareness, are potentially impacted by low statistical power and require a larger number of respondents to qualify or confirm the findings of this study.

A total of five constructs related to transfer of training were identified, suitable instruments created and confirmed. All new scales show satisfactory properties as far as alpha reliability and factorial structure is concerned, however three limitations related to the used instruments should be addressed for future studies. First, in the scale for Controlled Motivation, the item "Someone suggested I take the training" should be reworded in order to eliminate the reference to referral marketing of the programme, while still capturing the externally motivating force to attending the training. Second, the item "I use a dedicated personal journal" in the Practice scale was removed due to low communality and may need to be reworded to better capture the practice of writing out

thought processes as part of several techniques trained. Lastly scale item 15 on the PCQ for measuring PsyCap has prompted questions regarding its interpretation and produced a fifths factor in the principal factor analysis. This finding could be indicative of an underlying issue in culture transfer or language and further validation of the PCQ in the New Zealand, South African and Australian context is suggested.

Implications

Recommendations for future research.

A stated objective for this study was to provide guidance for a future evaluation study. Several findings from this study can inform such design. Besides the before mentioned scale adjustments, the instruments developed and selected are suitable for future research in similar studies. As criterion variables, PsyCap and Mindful Awareness can be retained and depending on other study objectives supplemented with further variables. The criterion for mindfulness requires the selection of a more comprehensive instrument, such as the FFMQ (Baer et al 2006), for measuring Mindful Awareness before further research is to commence. While a study using a control group in a cross sectional design may be beneficial to establishing efficacy, the recommended approach is to create a study using repeated measure experiment with at least three, possibly four measurement points. At T1, shortly before attending the training all control variables, the criterion variables and motivation to attend are measured. At T2 at completion of the MTLW a measure for Experienced Utility is taken. Then at T3 approximately 3 months later at the completion of the post-training follow up programme measures for Post Training Support, Practice and all criterion variables is taken. Finally all T3 measurements are repeated after another 3 to 6 months to establish temporal stability of the intervention effect.

Not assessed in this study were group differences such as gender, educational background, occupation or work status and if such differences were relevant to the constructs or the effectiveness of transfer. Of specific interest are gender differences as this study had, for unknown reasons, a much larger female participation. Also occupational or work status differences as they may point toward a group or groups that warrant specifically adjusted versions of the training being developed and delivered.

Finally research specific to the leadership context, using measures of authentic leadership and followership and the observable changes as the training method is applied would be of great interest. Specifically in the leadership context, reliance on and issues posed by self-report measures, need to be addressed by inclusion of observer ratings. The work of Walumbwa et al. (2008) on a theory based measure for authentic leadership may provide a viable starting point in such undertaking.

Contributions to theory and research.

So far the study has provided support for the state-like conceptualisation of PsyCap applicable to research beyond this study. The new "motivation to attend training" scale, a 12-item instrument providing a metrics each for controlled and autonomous motivation according to Self Determination Theory, can be altered and applied to other training settings. More generically, the application of SDT to training transfer research warrants further consideration and may provide results to guide training providers and employers with new insights in the modern environment where performance, personal values, self-regulation and well-being is increasingly prevalent. This study has identified a relationship between mindful awareness and controlled as well as autonomous motivation, and also a relationship between PsyCap and autonomous motivation. In both instances, sighted literature has not provided an answer to these findings, offering an area for future theoretical reasoning and testing.

Contributions to I/O practice.

Most importantly this study confirmed PsyCap as a suitable construct and measure for work related effectiveness of this open skills training. Having this quantifiable construct enables I/O practitioners to measure and justify the investment and effort in participation of the MTLW. The study also provided clear information on the training transfer path and by doing so offers means to positively influence transfer of the training content. This study also provided further indication that controlled motivation to attend the training has no reliable impact on training transfer. I/O practitioners and the training provider should focus on creating a positive and valuable training experience in order to stimulate transfer. The sponsoring organisation may best support transfer by enabling post-training support activities to occur and for participants to attend follow up sessions. Such knowledge allows planning and provisioning of support within the work environment, and thus the opportunity for maximising the impact of the training for the sponsoring organisations

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Summary and Concluding Comments

This study set out to create a first framework toward understanding predictors for training transfer and assessing the work related effectiveness of the MTLW. The study found that the combined score of perceptions of the training and its immediate value the best predictor for utilisation of the training content. The findings provided evidence that transfer is aided by utilisation of the post-training support opportunities offered by the training provider. The relationships found in this study suggest that Positive Psychological Capital is a suitable effectiveness measure, while Mindful Awareness requires the use of a more comprehensive scale, than used in this study, to assess its validity as an effectiveness measure for this training programme. The findings of this

study definitely provide a framework and suitable instruments to embark on an evaluation study to test effectiveness of the MTLW as an intervention.

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Appendix A: Descriptive Statistics of the Participants

Table 6: Demographics and details of the participant sample

Variable	Summary	Detailed breakdown
Age	M=45.54 years	min=21; max=65; *SD*=10.62
Gender	88 female; 26 male	
Country of residence	109 English speaking	45 New Zealand 27 United States of America 20 United Kingdom 13 South Africa 4 Australia 5 Other (non-English speaking)
Highest Education	97 with formal qualification	35 Post-graduate degree (Masters, PhD) 40 Graduate degree (Bachelor, US undergrad) 22 certificate / diploma / trade qualification 15 high school / University entrance certificate 2 lower than high school
Work status	98 employed/self-employed	65 employed 33 self-employed 7 home-making 5 students 2 retired 1 unemployed 1 other (mixed)
Time commitment	99 full or part time	82 full time 17 part time 13 flexible 2 other
Elapsed time since attending the training	M=4.80 years	max=26.50; min=.2; SD=5.64

Appendix B: Scale for Autonomous Motivation

This scale was designed to measure the trainee's autonomous motivation to attend the training on a Likert scale with 6 response options. Items 1, 2 and 3 are measuring intrinsic motivation, and items 4, 5 and 6 measuring extrinsic motivation with identified regulation.

Figure 7: Autonomous Motivation Scale - layout with response options

	Strongly Disagree					Strongly Agree
Item text	○	○	○	○	○	○

Table 7: Factor analysis of the items measuring the trainees' controlled motivation to attend.

#	Item	Factor 1	h^2
	I took the training because …		
1	I was curious in what I could learn next	.83	.39
2	I found pleasure in learning new skills	.77	.69
3	I enjoyed improving myself	.63	.59
4	I wanted to learn things that are important to me	.63	.40
5	I wanted to do something for myself	.62	.38
6	I wanted to better fulfill my goals	.60	.36
	Eigenvalue	3.31	
	Percentage of the variance explained (after extraction)	55.17	

Note: Principal axis factor analysis, oblimin rotation.

Appendix C: Scale for Controlled Motivation

This scale was designed to measure the trainee's controlled motivation to attend the training on a Likert scale with 6 response options. Items 7, 8 and 9 are measuring extrinsic motivation with introjected regulation, and items 10, 11 and 12 measuring extrinsic motivation with external regulation. Item 10 was removed as its mean and standard deviation suggested that a different aspect than the intended construct was measured.

Figure 8: Controlled Motivation Scale - layout with response options

	Strongly Disagree					Strongly Agree
Item text	○	○	○	○	○	○

Table 8: Factor analysis of the items measuring the trainees' autonomous motivation to attend.

#	Item	Factor 1	Factor 2	h^2
	I took the training because …			
1	I had to improve my skills to be successful	**.76**	.34	.58
2	I did not want to fall short in my performance	**.83**	.37	.69
3	In my role, I needed to improve my personal skills as a matter of reputation	**.74**	.39	.55
4	Someone suggested I attend the training (item was removed)	-	-	-
5	Someone said I need to change some of my behaviours	.35	**.62**	.39
6	I felt pushed to attend (R)	.20	**.48**	.23
	Eigenvalue	2.45	1.07	
	Percentage of the variance explained (after extraction)	48.94	21.37	70.31
	Factor Correlation		.47	

Note: Principal axis factor analysis, oblimin rotation. (R) = reverse scored.

Appendix D: Scale for Experienced Utility

This scale was designed to measure the trainee's perception of the experience of the training, plus the judgements made on its value based on usefulness and applicability outside the training context, on a Likert scale with 6 response options. Items 1, 2 and 3 are measuring affective utility, and items 4 to 8 instrumental utility.

Figure 9: Experienced Utility Scale - layout with response options

	Strongly Disagree					Strongly Agree
Item text	O	O	O	O	O	O

Table 9: Factor analysis of the items measuring experienced utility of the training.

#	Item	Factor 1	h^2
1	I was really pleased I attended this training	.87	.75
2	I was put off by this training (R)	.60	.36
3	I found this training experience stimulating	.78	.61
4	I found this training applicable to my work situation	.76	.46
5	I found this training applicable to my personal life	.90	.80
6	I found this training to be valuable for my growth	.92	.85
7	I found this training helpful for dealing with my work demands	.71	50
8	I found this training helpful in my life outside work	.93	.87
	Eigenvalue	5.50	
	Percentage of the variance explained (after extraction)	68.74	

Note: Principal axis factor analysis, oblimin rotation. (R) = reverse scored.

Appendix E: Scale for Post Training Support

This scale was designed to measure the trainee's utilisation of the post-training support options available on a Likert scale with 6 response options. Items 1 to 4 assess the utilisation of specific support components, while item 5 is generally worded and reversed item.

Figure 10: Post Training Support Scale - layout with response options

	Strongly Disagree					Strongly Agree
Item text	O	O	O	O	O	O

Table 10: Factor analysis of the items measuring opportunities for support used following the training.

#	Item	Factor 1	h^2
1	I attended all the follow up classes	.50	.25
2	I worked with a more experienced person to develop my skills	.53	.29
3	I used the written 'process booklet' to help me	.81	.65
4	I listened to the audio support materials	.57	.32
5	I did not utilise any support after the training (R)	.72	.51
	Eigenvalue	2.57	
	Percentage of the variance explained (after extraction)	51.45	

Note: Principal axis factor analysis, oblimin rotation. (R) = reverse scored.

Appendix F: Scale for Practice

This scale was designed to measure the trainee's degree of practice and utilisation of the training content on a Likert scale with 6 response options. Items 1 to 4 are measuring frequency of use, and items 5 to 9 the extent of utilisation. Item 6 was removed due to low communality

Figure 11: Practice Scale - layout with response options

	Strongly Disagree					Strongly Agree
Item text	O	O	O	O	O	O

Table 11: Factor analysis of the items measuring frequency and degree of practice of the training content learnt.

#	Item	Factor 1	h^2
1	I regularly work with the tools	.87	.76
2	I make time to regularly practice	.83	.69
3	I used one of the tools just the other day	.81	.66
4	I hardly ever use the tools learnt (R)	.77	.59
5	I use most of the tools taught in the training	.86	.74
6	I use a dedicated personal journal (item was removed)	-	-
7	I work with a support partner	.77	.59
8	I am supporting others in their practice	.73	.54
9	I am not making use of the materials (R)	.77	.59
	Eigenvalue	5.51	
	Percentage of the variance explained (after extraction)	68.82	

Note: Principal axis factor analysis, oblimin rotation. (R) = reverse scored.

Appendix G: Mindful Attention Awareness Scale

This scale contains 5 items of the *Mindful Attention Awareness Scale* (MAAS; MacKillop & Anderson, 2007; Van Dam, Earleywine, & Borders, 2010) used.

Figure 12: MAAS - layout with response options

	Strongly Disagree					Strongly Agree
Item text	O	O	O	O	O	O

Table 12: Factor analysis of the items measuring Mindful Awareness.

#	Item	Factor 1	h^2
1	*MAAS7*: It seems I am "running on automatic", without much awareness of what I'm doing. (R)	.84	.70
2	*MAAS8*: I rush through activities without being really attentive to them. (R)	.83	.69
3	*MAAS9*: I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there. (R)	.81	.35
4	*MAAS10*: I do jobs or tasks automatically, without being aware of what I'm doing. (R)	.75	.66
5	*MAAS14*: I find myself doing things without paying attention. (R)	.59	.56
	Eigenvalue	3.34	
	Percentage of the variance explained (after extraction)	66.86	

Note: Principal axis factor analysis, oblimin rotation. (R) = reverse scored.

Appendix H: Scale for Positive Psychological Capital

The 24 item *Psychological Capital Questionnaire* (PCQ; Luthans et al. 2007b) scored on a 6 item Likert scale was used for this survey scale. Copyright conditions imposed prevent items being included in the table (Mind Garden Inc, 2012).

Figure 13: PCQ - layout with response options

	Strongly Disagree					Strongly Agree
Item text	O	O	O	O	O	O

Table 13: Factor analysis of the PCQ measuring work related Self-Efficacy, Hope, Resilience and Optimism.

#	Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	h^2
1	PCQ1 – Self Efficacy	.40	**.62**	-.26	.54	.27	.54
2	PCQ2 – Self Efficacy	.45	**.82**	-.44	.22	.15	.70
3	PCQ3 – Self Efficacy	.42	**.75**	-.35	.15	.26	.58
4	PCQ4 – Self Efficacy	.44	**.69**	-.42	.29	.43	.55
5	PCQ5 – Self Efficacy	**.60**	**.59**	-.14	.27	.10	.52
6	PCQ6 – Self Efficacy	.29	**.77**	-.32	.26	.15	.61
7	PCQ7 – Hope	**.70**	.54	-.39	.44	.26	.59
8	PCQ8 – Hope	.54	.49	-.57	.19	**.61**	.59
9	PCQ9 – Hope	**.69**	.41	-.26	.28	.23	.81
10	PCQ10 – Hope	.36	.41	**-.89**	.24	.35	.49
11	PCQ11 – Hope	.53	.54	-.55	.39	**.58**	.61
12	PCQ12 – Hope	.46	.48	**-.74**	.15	.34	.61
13	PCQ13 – Resilience (R)	**.54**	.42	-.27	.38	.47	.45
14	PCQ14 – Resilience	.41	.31	-.22	**.74**	.24	.60
15	PCQ15 – Resilience	.07	.13	-.07	**.52**	-.02	.28
16	PCQ16 – Resilience	**.62**	.36	-.30	.33	.40	.45
17	PCQ17 – Resilience	**.62**	.30	-.24	.18	.06	.42
18	PCQ18 – Resilience	**.61**	.40	-.39	.37	.25	.45

Table 13 continued: Factor analysis of the PCQ measuring work related Self-Efficacy, Hope, Resilience and Optimism.

#	Item		Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	h^2
19	PCQ19 – Optimism		**.66**	.45	-.53	.12	.55	.61
20	PCQ20 – Optimism (R)		.23	.16	-.29	.06	**.68**	.46
21	PCQ21 – Optimism		**.76**	.42	-.43	.17	.47	.63
22	PCQ22 – Optimism		**.64**	.45	-.51	.30	.50	.56
23	PCQ23 – Optimism (R)		.23	.30	-.54	.03	**.57**	.46
24	PCQ24 – Optimism		**.70**	.38	-.34	.00	.48	.60
	Eigenvalue		9.49	1.85	1.65	1.38	1.04	
	Percentage of the variance explained (after extraction)		39.49	7.70	6.85	5.76	4.34	64.15
	Factor correlations	1	1					
		2	.50	1				
		3	-.37	-.41	1			
		4	.28	.31	-.15	1		
		5	.34	.26	-.41	.09	1	

Note: Principal axis factor analysis, oblimin rotation. (R) = reverse scored.